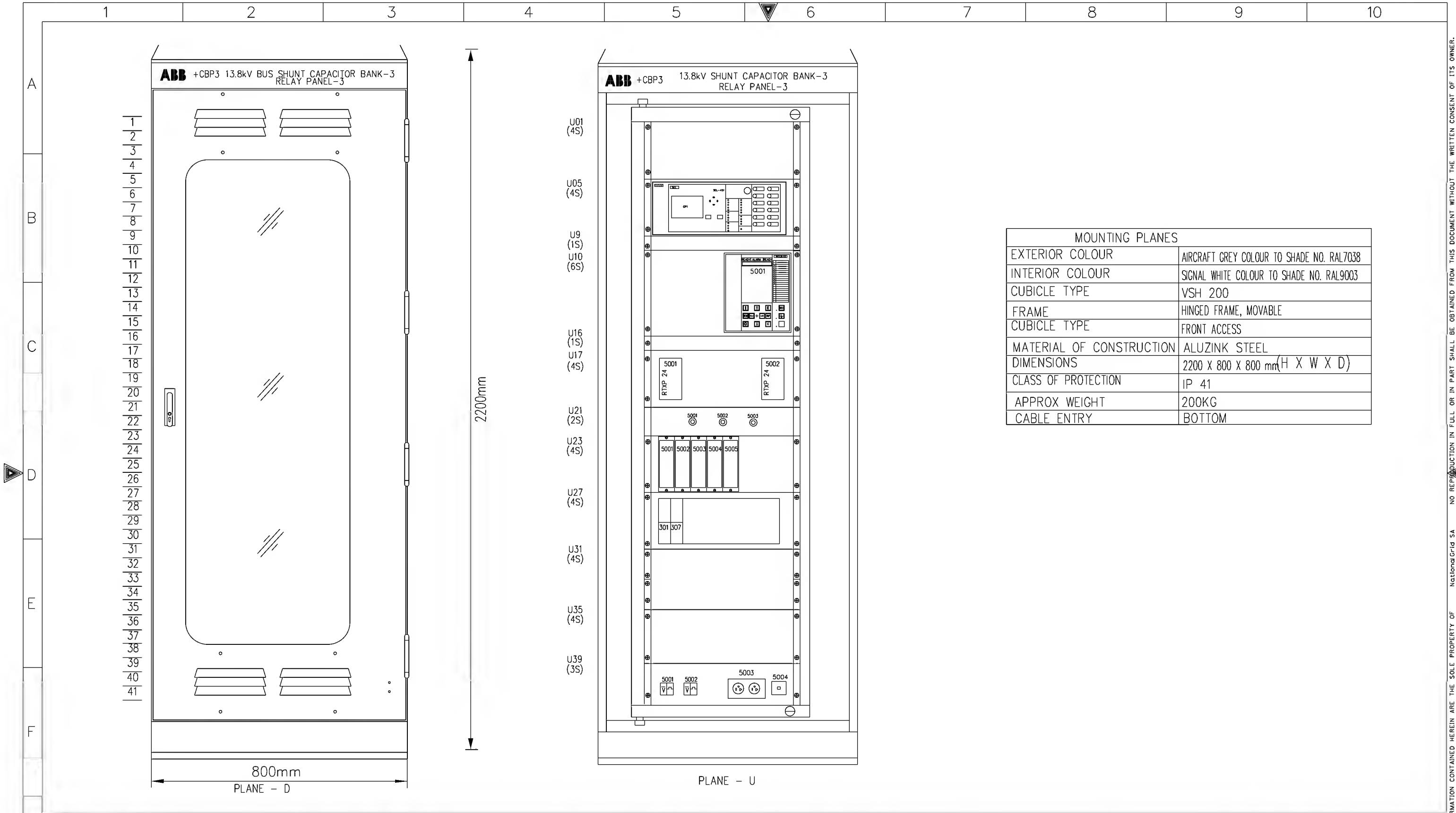


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C	CONTRACTOR : ABB Contracting Company																																		
	CLIENT : National Gridsa																																		
D	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8																																		
	SUBSTATION : S/S 8709																																		
E	CONTRACT NO. : 11131113/00																																		
F	TITLE : Assembly Drawing – +CBP3 [CAPACIT																																		
G	<table><tr><td colspan="2">AS-BUILT BY _____ DATE _____</td><td>CONTRACT NO. 11131113/00</td><td>JOB ORDER NO. S-13656</td><td colspan="3">COVER SHEET</td></tr><tr><td>01</td><td>14 08</td><td>FACTORY AS BUILT</td><td>DRAWN BY RIZ CHECKED BY KVR</td><td colspan="3">13.8kV CAPACITOR BANK-3 PROT. PANEL</td></tr><tr><td>00</td><td>13 04</td><td>FOR APPROVAL</td><td>DATE STARTED 24.01.2013 DATE COMPLETED _____</td><td colspan="3">S/S 8709-132/13.8KV IN AL-KHARJ CITY</td></tr><tr><td>REV. NO.</td><td>DATE</td><td>DESCRIPTION</td><td>OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC</td><td colspan="3">RIYADH SAUDI ARABIA</td></tr></table>							AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656	COVER SHEET			01	14 08	FACTORY AS BUILT	DRAWN BY RIZ CHECKED BY KVR	13.8kV CAPACITOR BANK-3 PROT. PANEL			00	13 04	FOR APPROVAL	DATE STARTED 24.01.2013 DATE COMPLETED _____	S/S 8709-132/13.8KV IN AL-KHARJ CITY			REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC	RIYADH SAUDI ARABIA		
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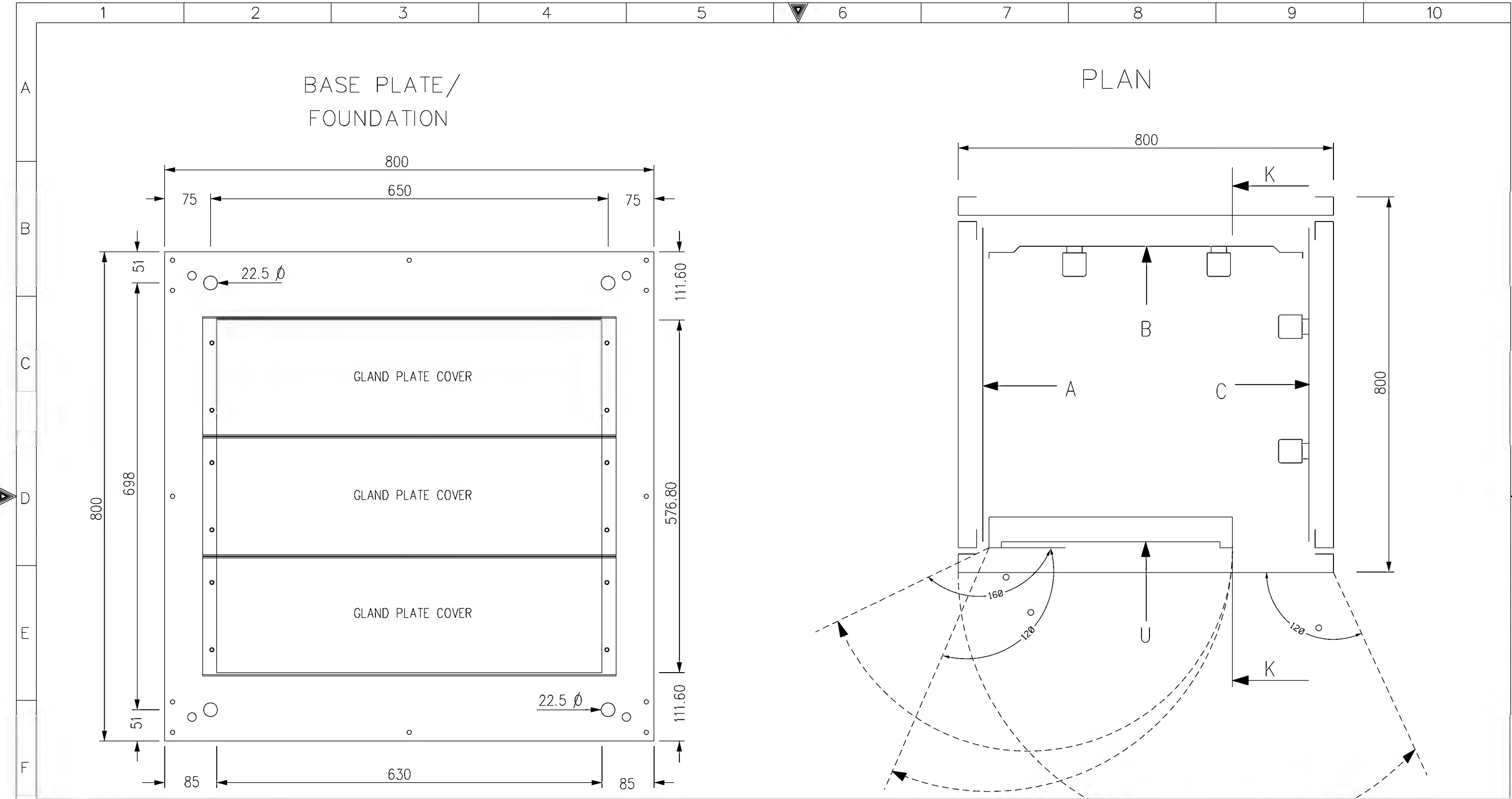
MOUNTING PLANES	
EXTERIOR COLOUR	AIRCRAFT GREY COLOUR TO SHADE NO. RAL7038
INTERIOR COLOUR	SIGNAL WHITE COLOUR TO SHADE NO. RAL9003
CUBICLE TYPE	VSH 200
FRAME	HINGED FRAME, MOVABLE
CUBICLE TYPE	FRONT ACCESS
MATERIAL OF CONSTRUCTION	ALUZINK STEEL
DIMENSIONS	2200 X 800 X 800 mm(H X W X D)
CLASS OF PROTECTION	IP 41
APPROX WEIGHT	200KG
CABLE ENTRY	BOTTOM

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656
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ASSEMBLY DRAWING	
13.8kV CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء				نقل الكهرباء		
				National Grid SA		
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.		REV. NO.
P	C421	CD-322955		SHT	CONT.	01
				G01	G02	





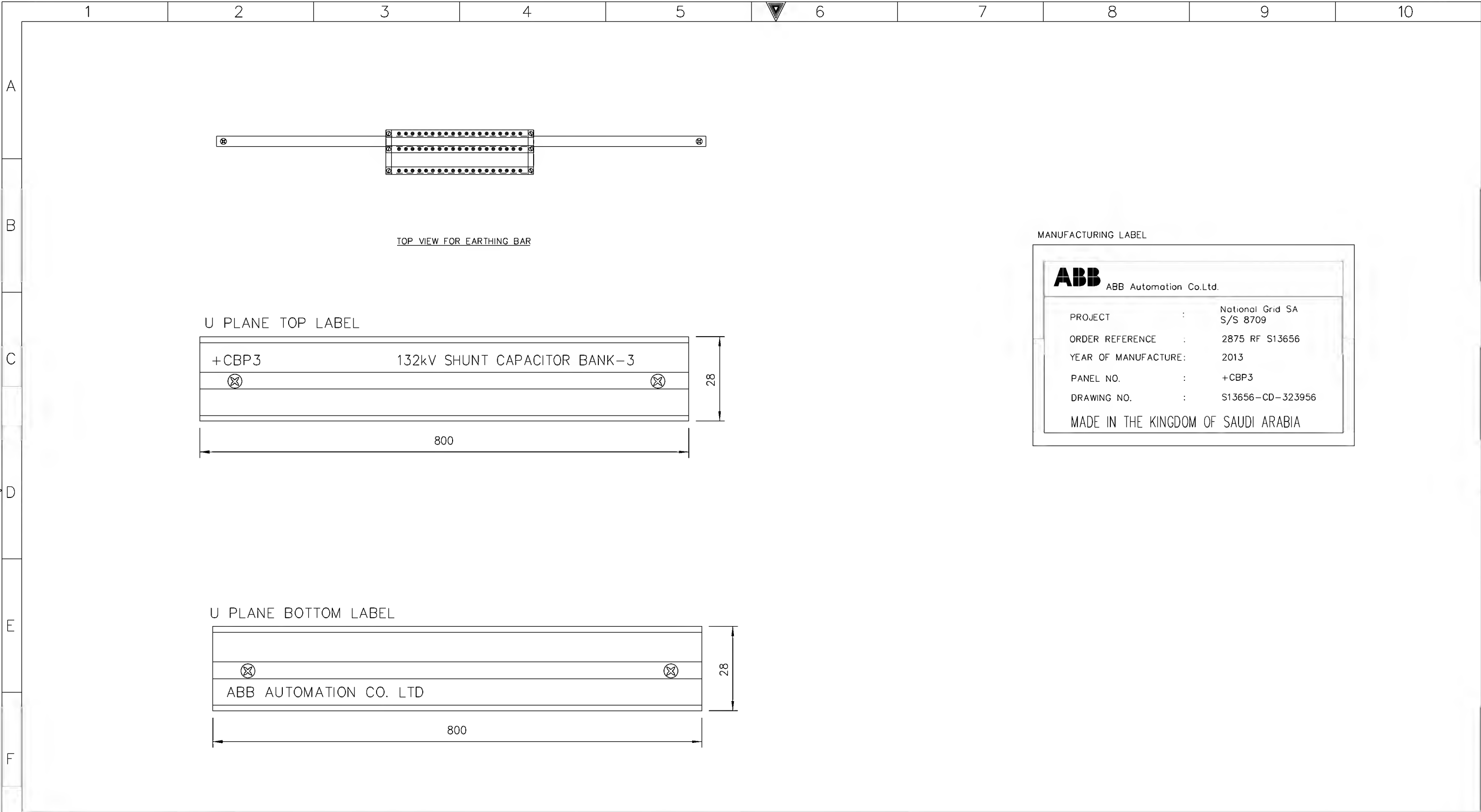
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ASSEMBLY DRAWING
13.8kV CAPACITOR BANK-3 PROT. PANEL
S/S 8709-132/13.8KV IN AL-KHARJ CITY
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الشركة الوطنية لنقل الكهرباء National Grid sa				
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C421	CD-322955	G03/G04	01



AS-BUILT BY

DATE

CONTRACT NO.

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JOB ORDER NO.

S-13656

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REV. NO.

DATE

DESCRIPTION

DRAWN BY

RIZ

CHECKED BY

KVR

DATE STARTED

24.01.2013

DATE COMPLETED

OPRG. DEPT.

CTPD

ENG. DEPT.

AUT-PSAC

ASSEMBLY DRAWING

13.8kV CAPACITOR BANK-3 PROT. PANEL

S/S 8709-132/13.8KV IN AL-KHARJ CITY

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

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C421

CD-322955

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NG/D2-D (2012/01)

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NG/D2-D (2012/01)

DMS VECTOR NGD200

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CONTACT R2 ± SUPPLY</td><td></td><td></td><td>S2-H02</td><td></td><td>GH S270 1916 R0003</td></tr><tr><td>16</td><td>U39.5003</td><td>C01,C02</td><td>CONVENIENCE OUTLET 10A, 127V, 220V AC</td><td>211</td><td>1</td><td>USM45 & USMS45</td><td>LEGRAND</td><td>74140 & 74180</td></tr><tr><td rowspan="3">D</td><td>17</td><td></td><td>DS</td><td>DOOR SWITCH FOR CONTROL OF CUBICLE INTERNAL ILLUM. LAMP</td><td>211</td><td>1</td><td>LS30P13B02</td><td>ABB</td><td>1SBV 010 213R 1202</td></tr><tr><td>18</td><td></td><td>IL</td><td>INTERNAL ILLUMINATION CUBICLE LAMP SUITABLE FOR 127V 60HZ SUPPLY</td><td>211</td><td>1</td><td>T4</td><td>SUNON</td><td>SP-20W</td></tr><tr><td>19</td><td></td><td>C1,C2</td><td>MINIATURE CIRCUIT BREAKER, 2 POLE, 10A FOR CONVENIENCE OUTLET</td><td>211</td><td>2</td><td>S202P-P10</td><td>ABB</td><td>2CDS 252 001 R0427</td></tr><tr><td rowspan="3">E</td><td></td><td></td><td></td><td>WITH AUXILIARY SWITCH, 1NO + 1NC CONTACTS</td><td></td><td></td><td>S2C-H11L</td><td></td><td>GH S270 1917 R0001</td></tr><tr><td>20</td><td></td><td>SH</td><td>SPACE HEATER, 150W, 120V, 60Hz</td><td>211</td><td>1</td><td>RICA</td><td>GRUPPO</td><td>1FZEK006C001</td></tr><tr><td>21</td><td></td><td>C3</td><td>THERMOSTAT FOR SPACE HEATER, 5-60°C</td><td>211</td><td>1</td><td>SK 3110</td><td>RITTAL</td><td>SK 3110</td></tr><tr><td rowspan="3">F</td><td>22</td><td></td><td>C7</td><td>ON/OFF SWITCH FOR SPACE HEATER</td><td>211</td><td>1</td><td>M2SS1-10B</td><td>ABB</td><td>1SFA 611 200 R1006</td></tr><tr><td>23</td><td>U39.5004</td><td>TJ</td><td>TELE PHONE JACK IGANG 4WIRE</td><td>211</td><td>1</td><td>MCBH-10</td><td>EDISON</td><td>1SFA 611 605 R1101</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td>EDF410</td><td></td><td>EDF410</td></tr><tr><td rowspan="3">G</td><td colspan="10"><table><tr><td colspan="2">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. 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TYPE	MAKE	ORDERING INFORMATION	14	U27.307	74R2	DC SUPERVISION RELAY	221	1	RXSF1	ABB	RK 271 019-AN			SPARE	AUX. VOLTAGE : 110-125V DC									CONTACTS : 1NO + 2NC PER COIL						C	15	U39.5001	Q1	MCB 2 POLE 6A, FOR DC SUPPLY WITH 2NC AUX. CONTACT R1 ± SUPPLY	216	2	S282 UC K6	ABB	GH S282 0164 R0317		U39.5002	Q2	MCB 2 POLE 6A, FOR DC SUPPLY WITH 2NC AUX. CONTACT R2 ± SUPPLY			S2-H02		GH S270 1916 R0003	16	U39.5003	C01,C02	CONVENIENCE OUTLET 10A, 127V, 220V AC	211	1	USM45 & USMS45	LEGRAND	74140 & 74180	D	17		DS	DOOR SWITCH FOR CONTROL OF CUBICLE INTERNAL ILLUM. LAMP	211	1	LS30P13B02	ABB	1SBV 010 213R 1202	18		IL	INTERNAL ILLUMINATION CUBICLE LAMP SUITABLE FOR 127V 60HZ SUPPLY	211	1	T4	SUNON	SP-20W	19		C1,C2	MINIATURE CIRCUIT BREAKER, 2 POLE, 10A FOR CONVENIENCE OUTLET	211	2	S202P-P10	ABB	2CDS 252 001 R0427	E				WITH AUXILIARY SWITCH, 1NO + 1NC CONTACTS			S2C-H11L		GH S270 1917 R0001	20		SH	SPACE HEATER, 150W, 120V, 60Hz	211	1	RICA	GRUPPO	1FZEK006C001	21		C3	THERMOSTAT FOR SPACE HEATER, 5-60°C	211	1	SK 3110	RITTAL	SK 3110	F	22		C7	ON/OFF SWITCH FOR SPACE HEATER	211	1	M2SS1-10B	ABB	1SFA 611 200 R1006	23	U39.5004	TJ	TELE PHONE JACK IGANG 4WIRE	211	1	MCBH-10	EDISON	1SFA 611 605 R1101							EDF410		EDF410	G	<table><tr><td colspan="2">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. 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			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>			LIST OF APPARATUS												
01 14 08 FACTORY AS BUILT			DATE STARTED <u>24.01.2013</u> DATE COMPLETED _____			13.8kV CAPACITOR BANK-3 PROT.PANEL												
00 13 04 FOR APPROVAL			OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>			S/S 8709-132/13.8KV IN AL-KHARJ CITY												
REV. NO.			DATE			DESCRIPTION			INDEX		PLANT NO.		DRAWING NUMBER		SHEET NO.		REV. NO.	
									P		C421		CD-322955		SHT		CONT.	
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LABEL REF.	LABEL ENGRAVING	MATERIALS	ENGRAVING	LABEL SIZE	LETTER SIZE
U05.5001	U05.5001 GP1	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U10.5001	U10.5001 GP2	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U17.5001	U17.5001 TS-1	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm
U17.5002	U17.5002 TS-2	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm
U21.5001	U21.5001 PB11	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U21.5002	U21.5002 PB22	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U21.5003	U21.5003 PB21	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U23.5001	U23.5001 86C-1	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U23.5002	U23.5002 94-1	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U23.5003	U23.5003 86CBF	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U23.5004	U23.5004 86C-2	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
U23.5005	U23.5005 94-2	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X10mm	3mm
U27: 301	U27.301 74R1	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm
U27: 307	U27.307 74R2	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm

AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656
01	14 08	DRAWN BY RIZ CHECKED BY KVR	
00	13 04	DATE STARTED 24.01.2013 DATE COMPLETED _____	
REV. NO.	DATE	DESCRIPTION	
		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC	

LIST OF APPARATUS	
13.8kV CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH SAUDI ARABIA	

الشركة الوطنية لنقل الكهرباء		National Grid sa		
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C421	CD-322955	L05L06	01

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LABEL REF.	LABEL ENGRAVING	MATERIALS	ENGRAVING	LABEL SIZE	LETTER SIZE
C1	C1 127V AC SUPPLY MCB	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C2	C2 220V AC SUPPLY MCB	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C3	C3 THERMOSTAT	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C7	C7 ON/OFF SWITCH	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
DS	DS DOOR SWITCH	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
IL	IL ILLUMINATION LAMP	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
SH	SH SPACE HEATER	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm

AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656
01	14 08	FACTORY AS BUILT	
00	13 04	FOR APPROVAL	
REV. NO.	DATE	DESCRIPTION	

DRAWN BY RIZ	CHECKED BY KVR
DATE STARTED 24.01.2013	DATE COMPLETED _____
OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC

LIST OF APPARATUS	
13.8kv CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء		نقل الكهرباء		National Grid sa	
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.	
P	C421	CD-322955	L06	NIL	01

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A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD. 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A																																																										
B																																																																		
C	CONTRACTOR : ABB Contracting Company																																																																	
	CLIENT : National Gridsa																																																																	
D	PROJECT : CONSTRUCTION OF NEW 132/13.8kv SS 8709 IN AL-KHARJ CITY																																																																	
	SUBSTATION : S/S 8709																																																																	
E	CONTRACT NO. : 11131113/00																																																																	
	TITLE : SCHEMATICS DRAWINGS +CBP3 (SHUNT CAPACITOR BANK-3)																																																																	
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G	<table><tr><td colspan="3">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. S-13656</td><td colspan="3">COVER SHEET</td><td colspan="2"> نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid sa</td></tr><tr><td>01</td><td>14 08</td><td rowspan="2">FACTORY AS BUILT FOR APPROVAL</td><td colspan="2">DRAWN BY RIZ</td><td colspan="2">CHECKED BY KVR</td><td colspan="3">13.8kv CAPACITOR BANK-3 PROT. PANEL</td><td>INDEX</td><td>PLANT NO.</td><td>DRAWING NUMBER</td><td>SHEET NO.</td><td>REV. NO.</td></tr><tr><td>00</td><td>13 04</td><td colspan="2">DATE STARTED 24.01.2013</td><td colspan="2">DATE COMPLETED</td><td colspan="3">S/S 8709-132/13.8KV IN AL-KHARJ CITY</td><td>P</td><td>C421</td><td>CD-322956</td><td>SHT 000</td><td>CONT. 001</td></tr><tr><td>REV. NO.</td><td>DATE</td><td>DESCRIPTION</td><td colspan="2">OPRG. DEPT. CTPD</td><td colspan="2">ENG. DEPT. AUT-PSAC</td><td colspan="3">RIYADH SAUDI ARABIA</td><td colspan="5"></td></tr></table>										AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET			 نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid sa		01	14 08	FACTORY AS BUILT FOR APPROVAL	DRAWN BY RIZ		CHECKED BY KVR		13.8kv CAPACITOR BANK-3 PROT. PANEL			INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.	00	13 04	DATE STARTED 24.01.2013		DATE COMPLETED		S/S 8709-132/13.8KV IN AL-KHARJ CITY			P	C421	CD-322956	SHT 000	CONT. 001	REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA							
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NG/D2-D (2012/01)

DMS

VECTOR

NGD200

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01	14 08	FACTORY AS BUILT		DRAWN BY RIZ CHECKED BY KVR		13.8kV CAPACITOR BANK-3 PROT. PANEL		INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.		
00	13 04	FOR APPROVAL		DATE STARTED 24.01.2013 DATE COMPLETED _____		S/S 8709-132/13.8KV IN AL-KHARJ CITY					SHT	CONT.		
REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		P	C421	CD-322956	001	011	01	
										NG/D2-D (2012/01)		DMS VECTOR		NGD200

CONTENTS	ABB SHT.NO.	REV.00	REV.01	REV.02
COVER SHEET	000	X	X	
CONTENTS SHEET	001	X	X	
GRAPHICAL SYMBOLS FOR DIAGRAMS	011	X	X	
GRAPHICAL SYMBOLS FOR DIAGRAMS	012	X	X	
COMMON LEGEND	013	X	X	
FERULE AND WIRING DETAILS	014	X	X	
DRAWING REFERENCES	015	X	X	
DRAWING REFERENCES	016	X	X	
AC SUPPLY FOR ILLUMINATION & POWER SOCKET	211	X	X	
AC SUPPLY AUXILARY CONTACTS	212	X	X	
CT&VT CIRCUITS –GP1 PROTN	213	X	X	
CT CIRCUITS–GP2 PROTN	214	X	X	
VT CIRCUITS–GP2 PROTN	215	X	X	
DC SUPPLY DISTRIBUTION ± R1,±R2	216	X	X	
DC LOGIC CIRCUITS–GP1 PROTECTION	217	X	X	
DC LOGIC CIRCUITS–GP1 PROTECTION	218	X	X	
DC LOGIC CIRCUITS–GP2 PROTECTION	219	X	X	
DC LOGIC CIRCUITS–GP2 PROTECTION	220	X	X	
DC LOGIC CIRCUITS–GP2 PROTECTION	221	X	X	
13.8kV CBS4605 TRIP CIRCUIT 1&2	222	X	X	
13.8kV CBS4605 CLOSE BLOCK CIRCUIT	223	X	X	
13.8kV CB CLOSE BLOCK CIRCUITS	224	X	X	
STATION COMMON ALARM CIRCUITS	227	X	X	

CONTENTS	ABB SHT.NO.	REV.00	REV.01	REV.02
SPARE CONTACTS	231	X	X	
SAS COMMUNICATIOIN	245	X	X	
BLOCK REFERENCE–GP1	601	X	X	
BLOCK REFERENCE–GP2	602	X	X	
BLOCK REFERENCE–GP2	603	X	X	
BLOCK REFERENCE–GP2	604	X	X	
TERMINAL BLOCK ALLOCATION	604	X	X	

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LEGENDS

±R1

±R2

±R3

±IT

FL

BB RS±

BB CBF±/CBF±

DC SUPPLY – MAIN PROTECTION

DC SUPPLY – SECONDARY PROTECTION

DC SUPPLY – BACK UP PROTECTION

DC SUPPLY – INTER TRIP

DC SUPPLY – FLASHING CIRCUIT

DC SUPPLY – BUS BAR – PROTECTION RESET

DC SUPPLY – CBF PROTECTION

R

CR

ECC

LOCAL

REMOTE

RESET BUS – ALARM SYSTEM

CONTROL ROOM

ENERGY CONTROL CENTRE

THE LOCATION OF CONTROLLED DEVICE

ANY OTHER LOCATION NOT LOCAL

ON

OFF

A

T

S

CS

CT

LS

LT

LC

LO

RO

CB NORMALLY OPEN AUXILIARY CONTACT

CB NORMALLY CLOSED AUXILIARY CONTACT

COMMON

TEST POSITION

SERVICE POSITION

CLOSE IN SERVICE POSITION

CLOSE IN TEST POSITION

LOCAL SERVICE

LOCAL TEST

LOCAL CLOSE

LOCAL OPEN

REMOTE OPEN

NOTES

LABELS

LUGS

FERULLING

WHITE LABEL WITH BLACK LETTERING WILL BE PROVIDED FOR ALL MOUNTED APPARATUS EQUIPMENT IDENTIFICATION AND FUNCTION REFERENCE LABEL WILL BE PROVIDED FOR FRONT MOUNTED EQUIPMENTS OF THE PANEL AND EQUIPMENT IDENTIFICATION LABEL WILL BE PROVIDED FOR INTERNALLY MOUNTED EQUIPMENTS

A. CT CIRCUITS– RING TYPE

B. OTHER CIRCUITS – SPADE TYPE

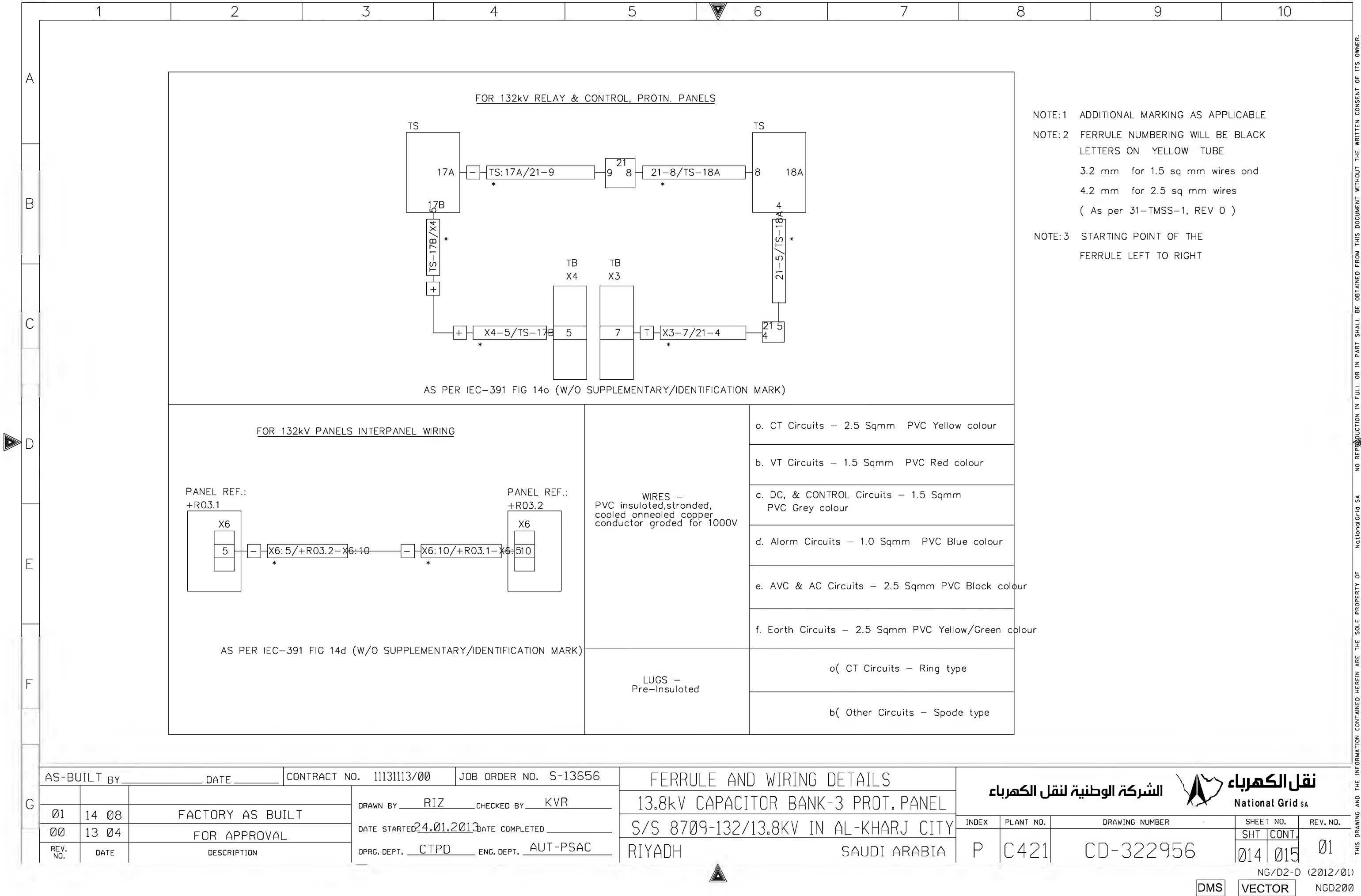
YELLO TUBE 3.2 mm FOR 1.5SQ mm WIRES AND 4.2 FOR 2.5 SQ mm WIRES (AS PER 31 – TMSS–1, RE.0)

AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COMMON LEGENDS		الشركة الوطنية لنقل الكهرباء National Grid sa	
01	14 08	FACTORY AS BUILT		DRAWN BY RIZ CHECKED BY KVR		13.8kV CAPACITOR BANK-3 PROT. PANEL		INDEX	PLANT NO.
00	13 04	FOR APPROVAL		DATE STARTED 24.01.2013 DATE COMPLETED _____		S/S 8709-132/13.8KV IN AL-KHARJ CITY		DRAWING NUMBER	SHEET NO.
REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		CD-322956	013 014 01

NG/D2-D (2012/01)

DMS VECTOR

NGD200



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D										
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AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

01	14 08	FACTORY AS BUILT	DRAWN BY RIZ	CHECKED BY KVR
00	13 04	FOR APPROVAL	DATE STARTED 24.01.2013	DATE COMPLETED _____
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC

DRAWING REFERENCES	
13.8kV CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء			 نقل الكهرباء		
			National Grid SA		
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
P	C421	CD-322956	SHT	CONT.	01
			015	016	

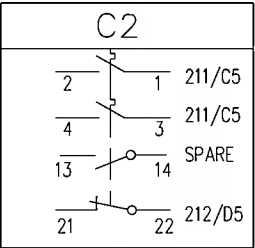
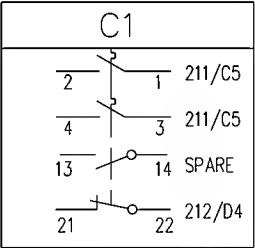
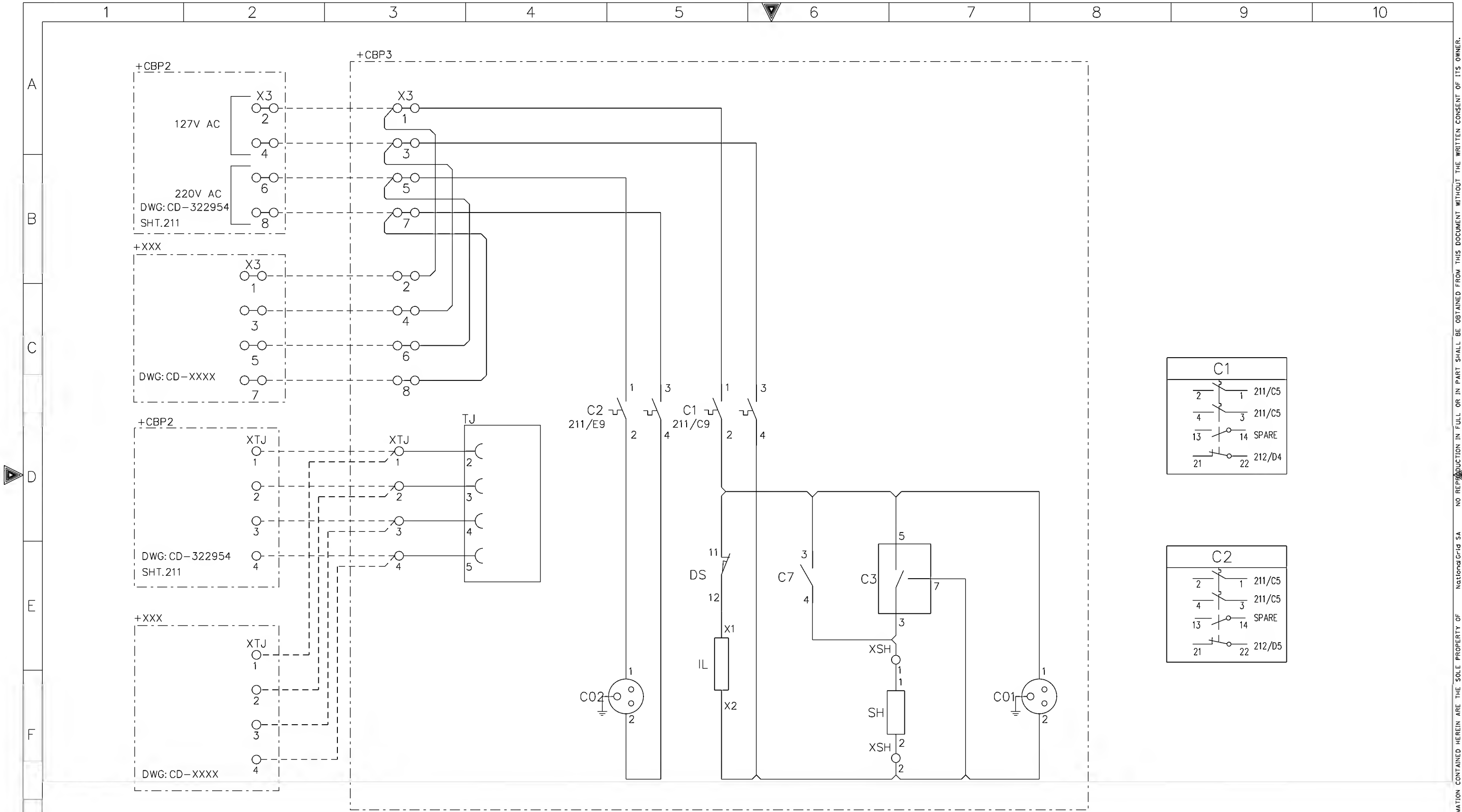
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C										
D										
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G										

MANUFACTURER	SCHEMATICS DWG.NO	PANEL DESCRIPTION	PANEL REFERENCE
 PROTECTION & SUBSTATION AUTOMATION		SS 8709 13.8KV RELAY PANELS	
	CD-322952	13.8KV Capacitor Bank-1 Protection Panel	+CBP-1
	CD-322954	13.8KV Capacitor Bank-2 Protection Panel	+CBP-2
	CD-322956	13.8KV Capacitor Bank-2 Protection Panel	+CBP-3
	CD-322958	13.8 KV ACCS PANEL	+ACCS
	CD-322962	13.8KV ACSE PANEL	+ACSE
	CD-322968	13.8KV Under Voltage Load Shedding Panel	+UVLS
	CD-322964	13.8KV Under Frequency Load Shedding Panel-1	+UFLS01
	CD-322966	13.8KV Under Frequency Load Shedding Panel-2	+UFLS02

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656
01	14 08	FACTORY AS BUILT	DRAWN BY RIZ CHECKED BY KVR	
00	13 04	FOR APPROVAL	DATE STARTED 24.01.2013 DATE COMPLETED _____	
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC	

DRAWING REFERENCES	
13.8kv CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH SAUDI ARABIA	

الشركة الوطنية لنقل الكهرباء			 نقل الكهرباء		
			National Grid SA		
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
P	C421	CD-322956	SHT	CONT.	01
			016	211	



AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

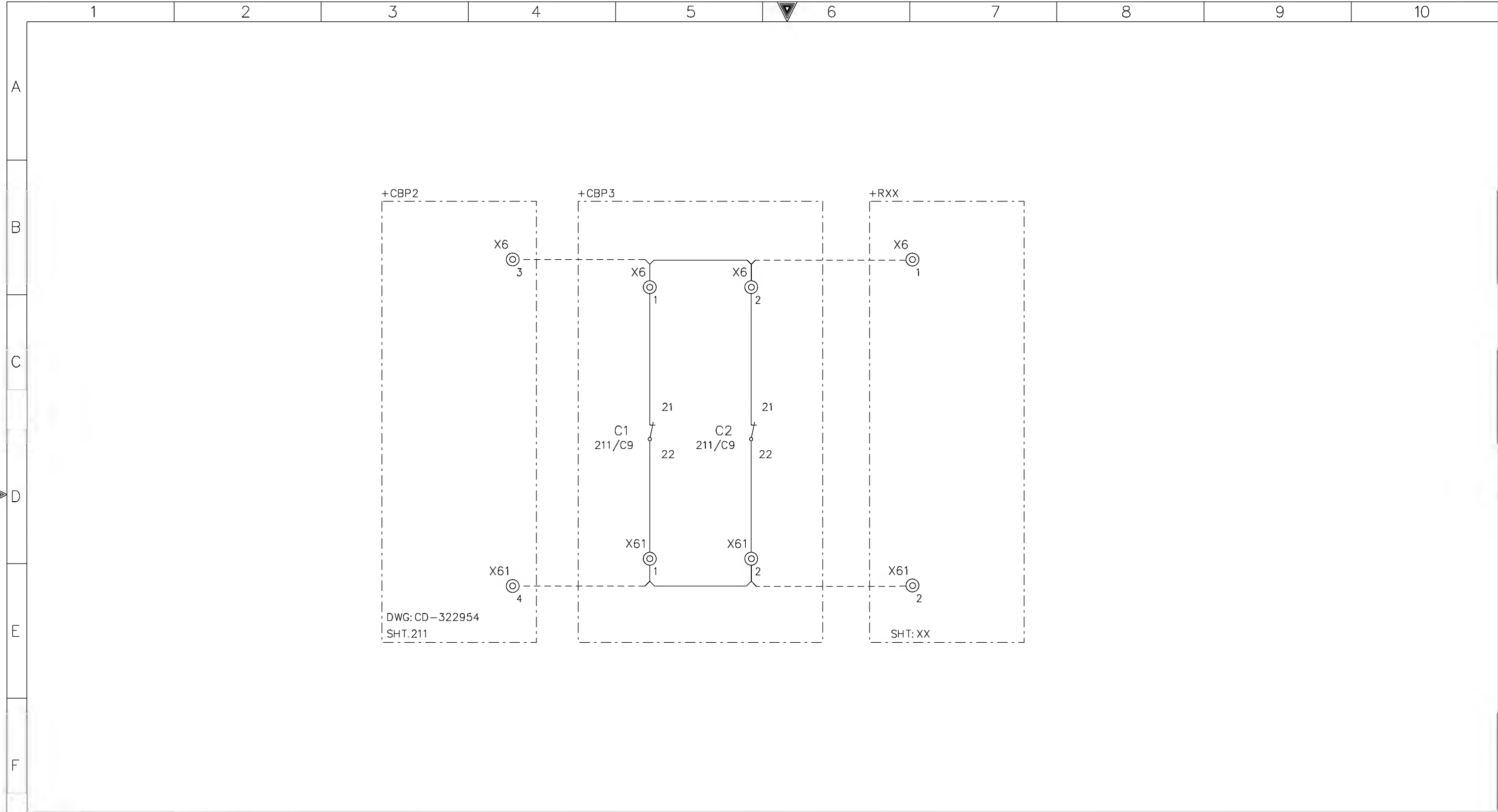
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00	13 04	FOR APPROVAL
REV. NO.	DATE	DESCRIPTION

DRAWN BY	RIZ	CHECKED BY	KVR
DATE STARTED	24.01.2013	DATE COMPLETED	
OPRG. DEPT.	CTPD	ENG. DEPT.	AUT-PSAC

AC SUPPLY FOR ILLUMINATION & POWER SOCKET
13.8kV CAPACITOR BANK-3 PROT. PANEL
S/S 8709-132/13.8KV IN AL-KHARJ CITY
RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء
National Grid sa

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C421	CD-322956	SHT 211	CONT. 212



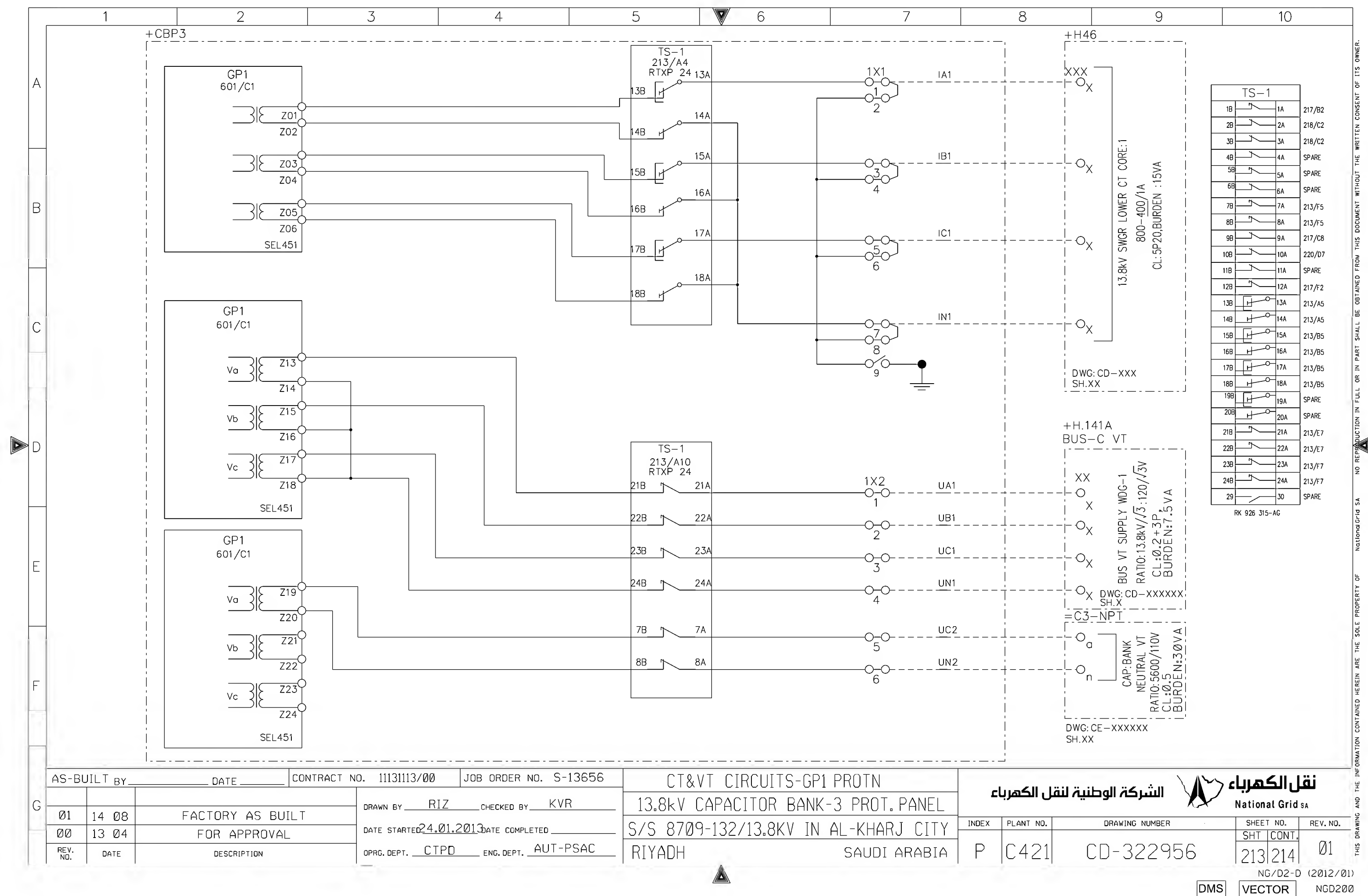
AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

01	14 08	FACTORY AS BUILT
00	13 04	FOR APPROVAL
REV. NO.	DATE	DESCRIPTION

DRAWN BY RIZ CHECKED BY KVR
DATE STARTED 24.01.2013 DATE COMPLETED _____
OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

AC SUPPLY AUXILARY CONTACTS
13.8kV CAPACITOR BANK-3 PROT. PANEL
S/S 8709-132/13.8KV IN AL-KHARJ CITY
RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء		نقل الكهرباء		National Grid sa	
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.	
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				REV. NO.	
				01	



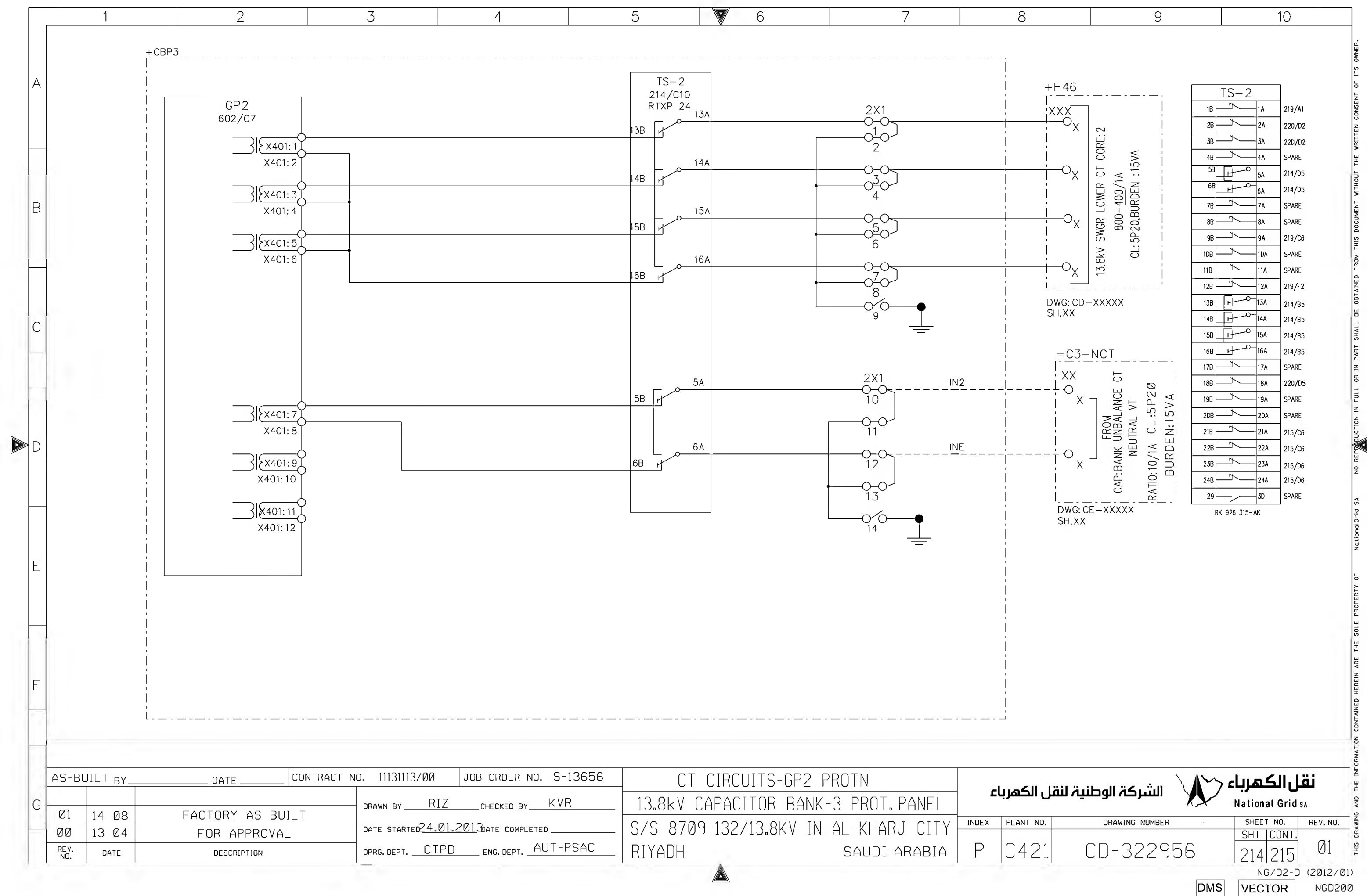
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1B	1A	217/B2
2B	2A	218/C2
3B	3A	218/C2
4B	4A	SPARE
5B	5A	SPARE
6B	6A	SPARE
7B	7A	213/F5
8B	8A	213/F5
9B	9A	217/C8
10B	10A	220/D7
11B	11A	SPARE
12B	12A	217/F2
13B	13A	213/A5
14B	14A	213/A5
15B	15A	213/B5
16B	16A	213/B5
17B	17A	213/B5
18B	18A	213/B5
19B	19A	SPARE
20B	20A	SPARE
21B	21A	213/E7
22B	22A	213/E7
23B	23A	213/F7
24B	24A	213/F7
29	30	SPARE

RK 926 315-AG

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656	
01	14 08	FACTORY AS BUILT FOR APPROVAL	DRAWN BY RIZ		CHECKED BY KVR	
00	13 04		DATE STARTED 24.01.2013		DATE COMPLETED _____	
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC	

CT&VT CIRCUITS-GP1 PROT N	
13.8kV CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH SAUDI ARABIA	

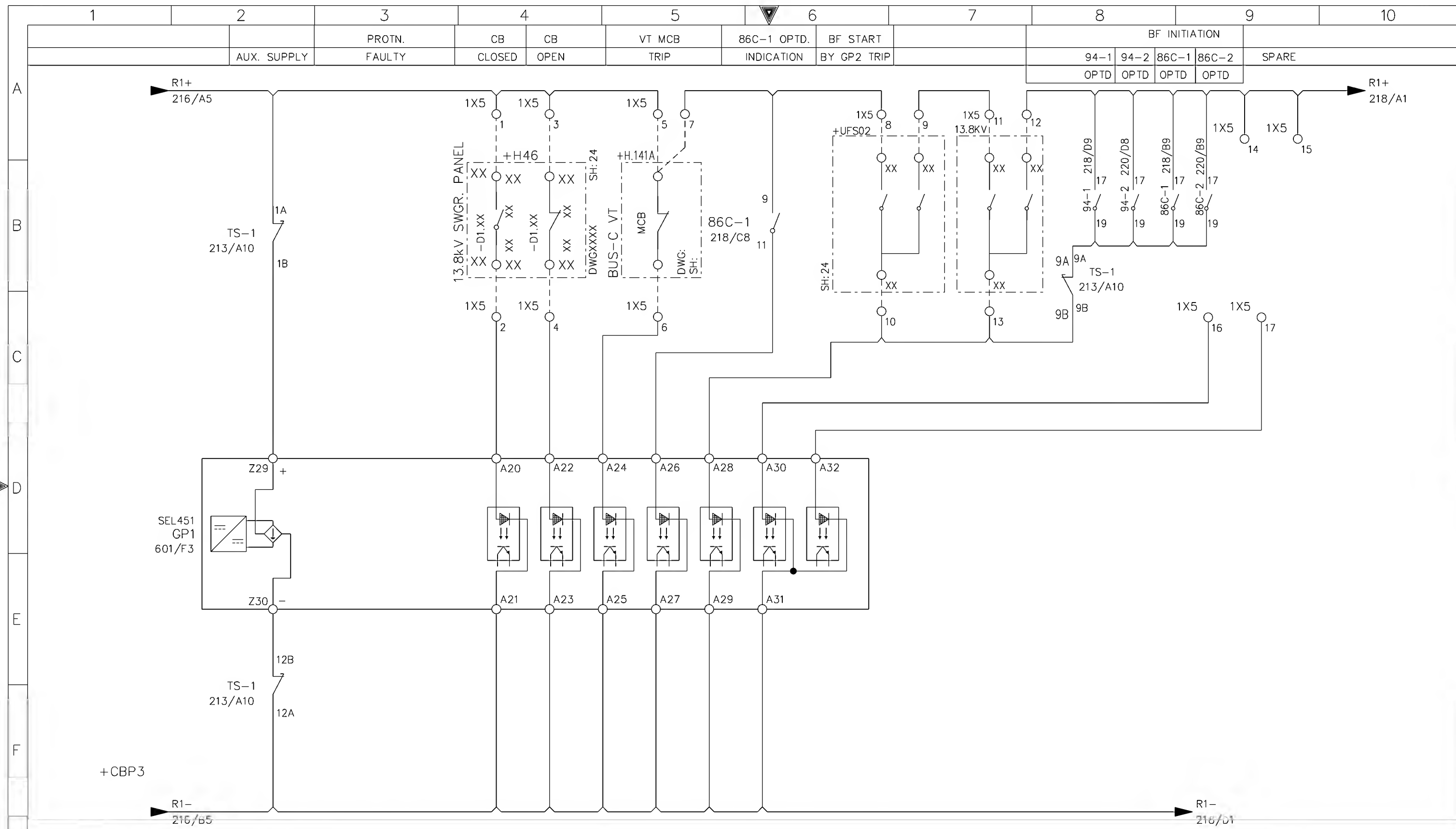
الشركة الوطنية لنقل الكهرباء National Grid sa				
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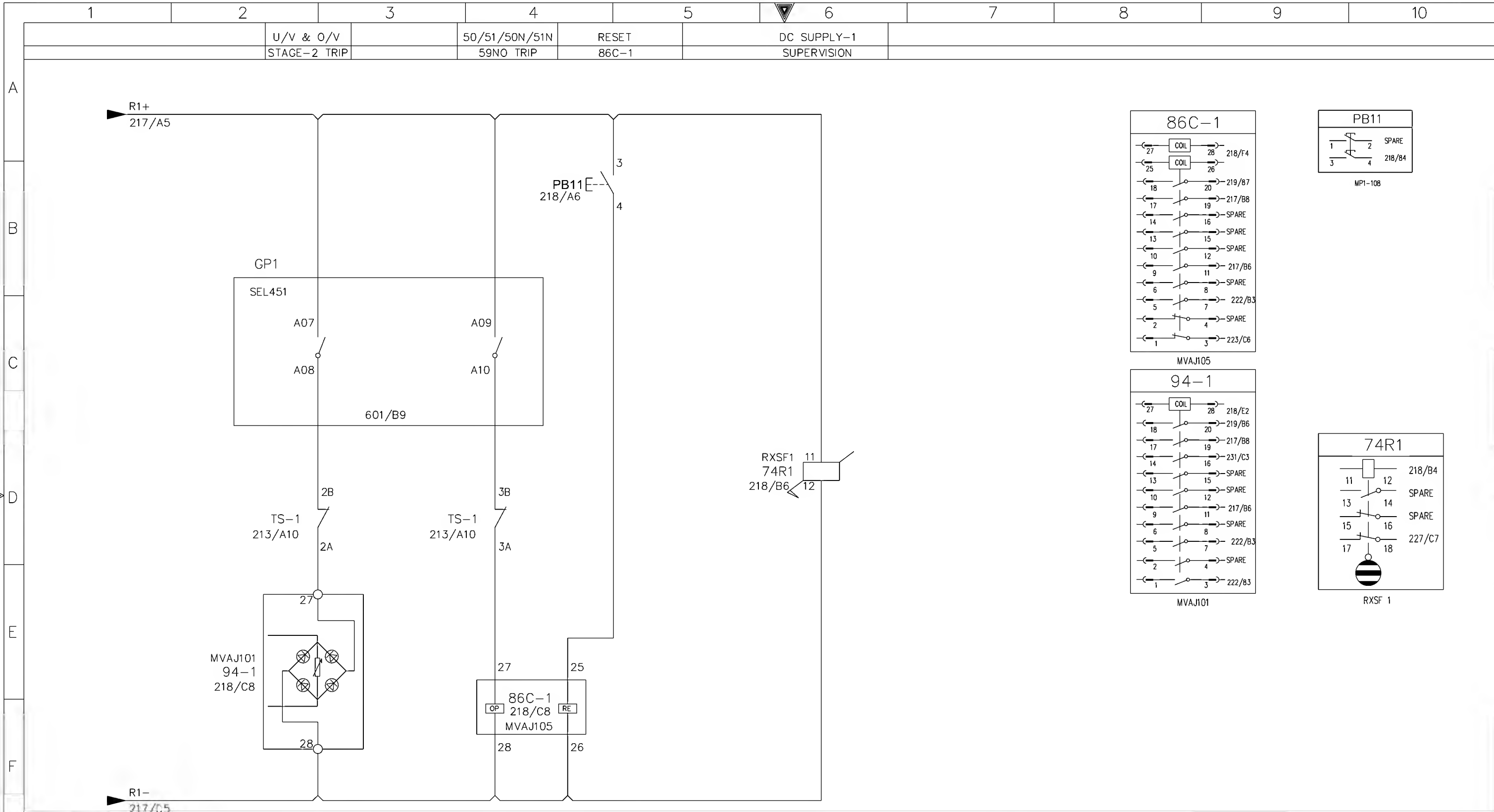
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656	
01	14 08	FACTORY AS BUILT FOR APPROVAL	DRAWN BY RIZ		CHECKED BY KVR	
00	13 04		DATE STARTED 24.01.2013		DATE COMPLETED _____	
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC	

CT CIRCUITS-GP2 PROTN	
13.8kV CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH SAUDI ARABIA	

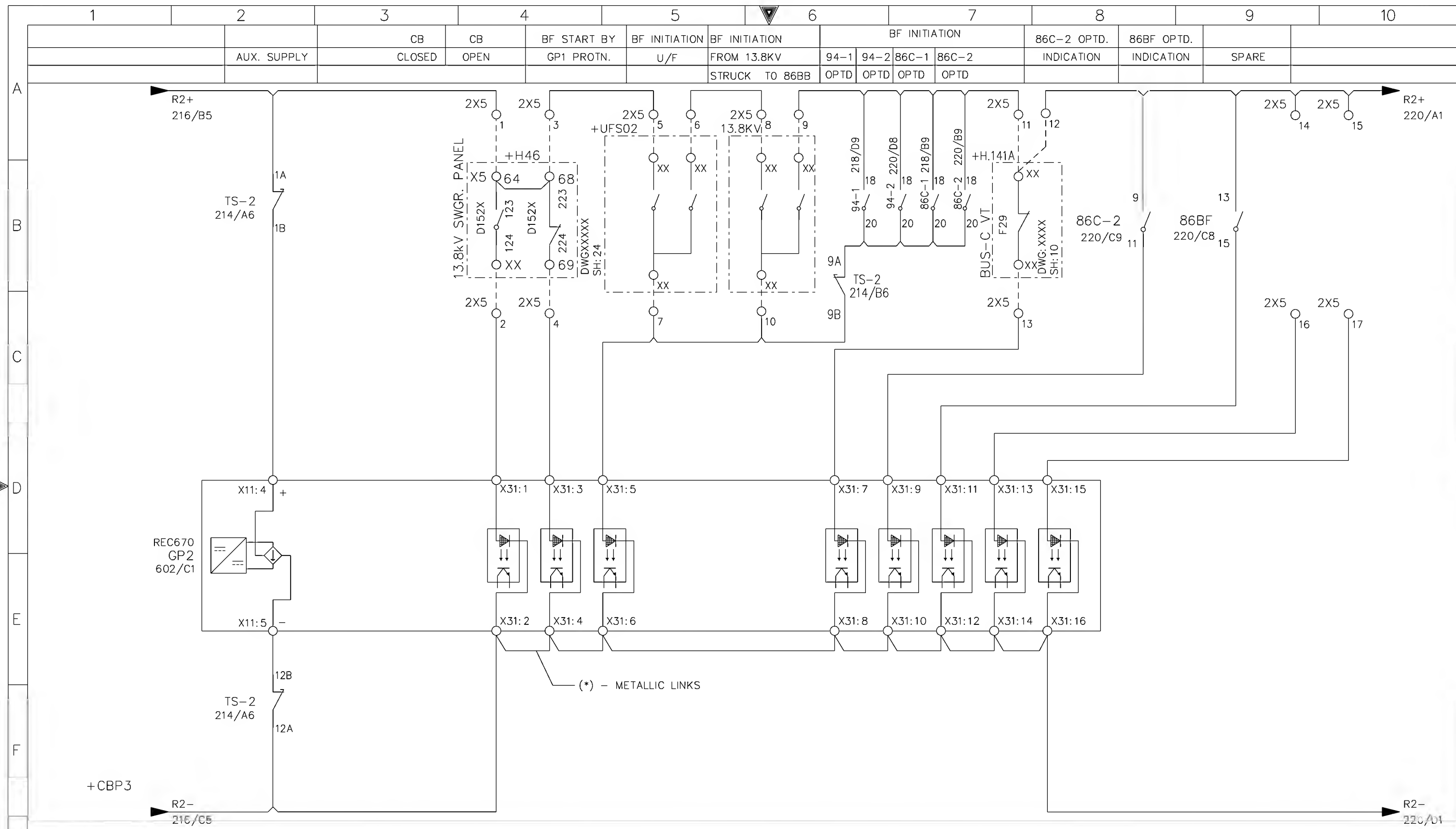
الشركة الوطنية لنقل الكهرباء		نقل الكهرباء	
National Grid sa		National Grid sa	
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.
P	C421	CD-322956	214/215
		REV. NO. 01	




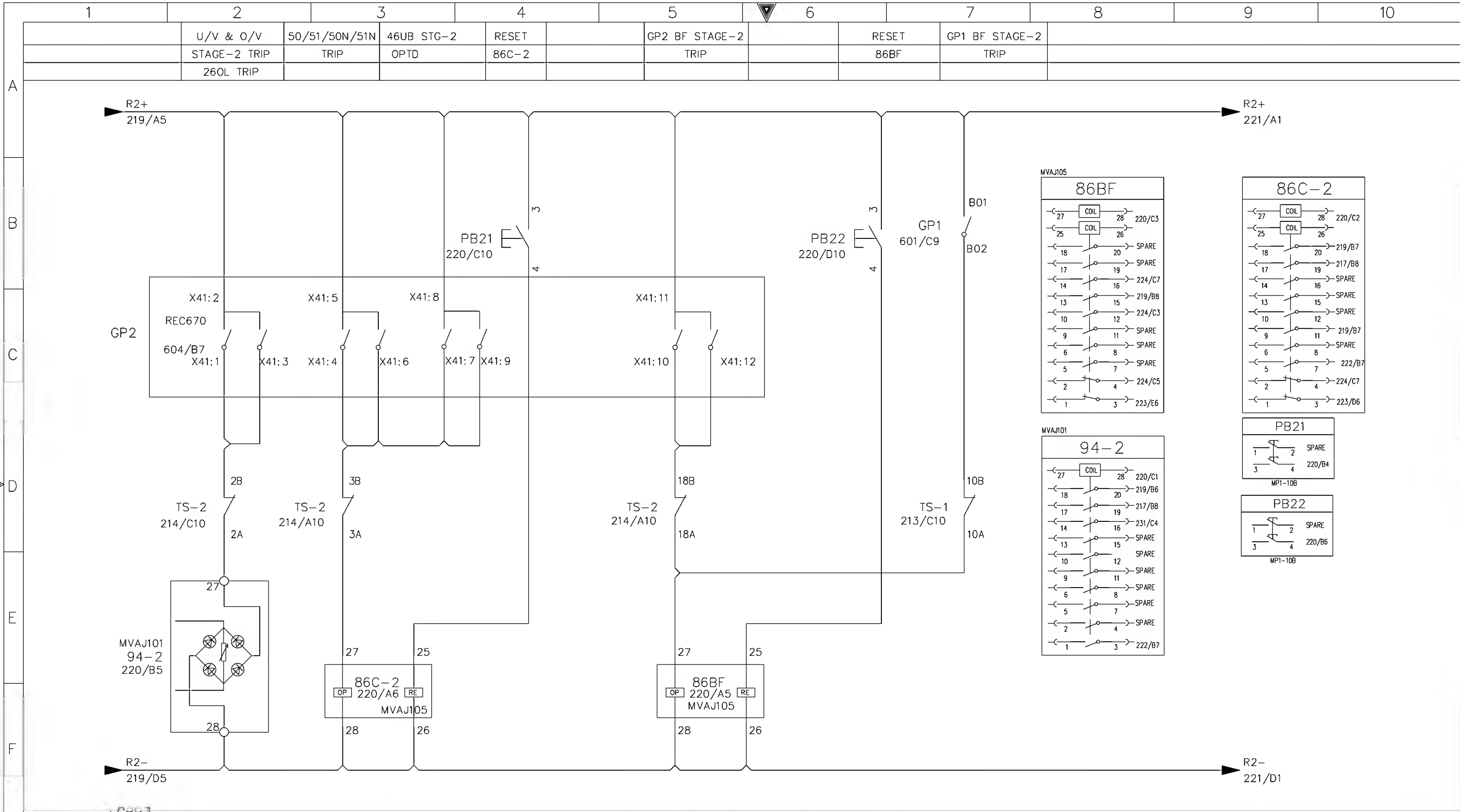
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		DC LOGIC CIRCUITS-GP1 PROTECTION		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>						
				DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>		13.8kV CAPACITOR BANK-3 PROT. PANEL									
	01	14 08	FACTORY AS BUILT		DATE STARTED <u>24.01.2013</u> DATE COMPLETED _____		S/S 8709-132/13.8KV IN AL-KHARJ CITY		INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.		REV. NO.
	00	13 04	FOR APPROVAL		OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA		P	C421	CD-322956		SHT	CONT.	01
	REV. NO.	DATE	DESCRIPTION										217	218	



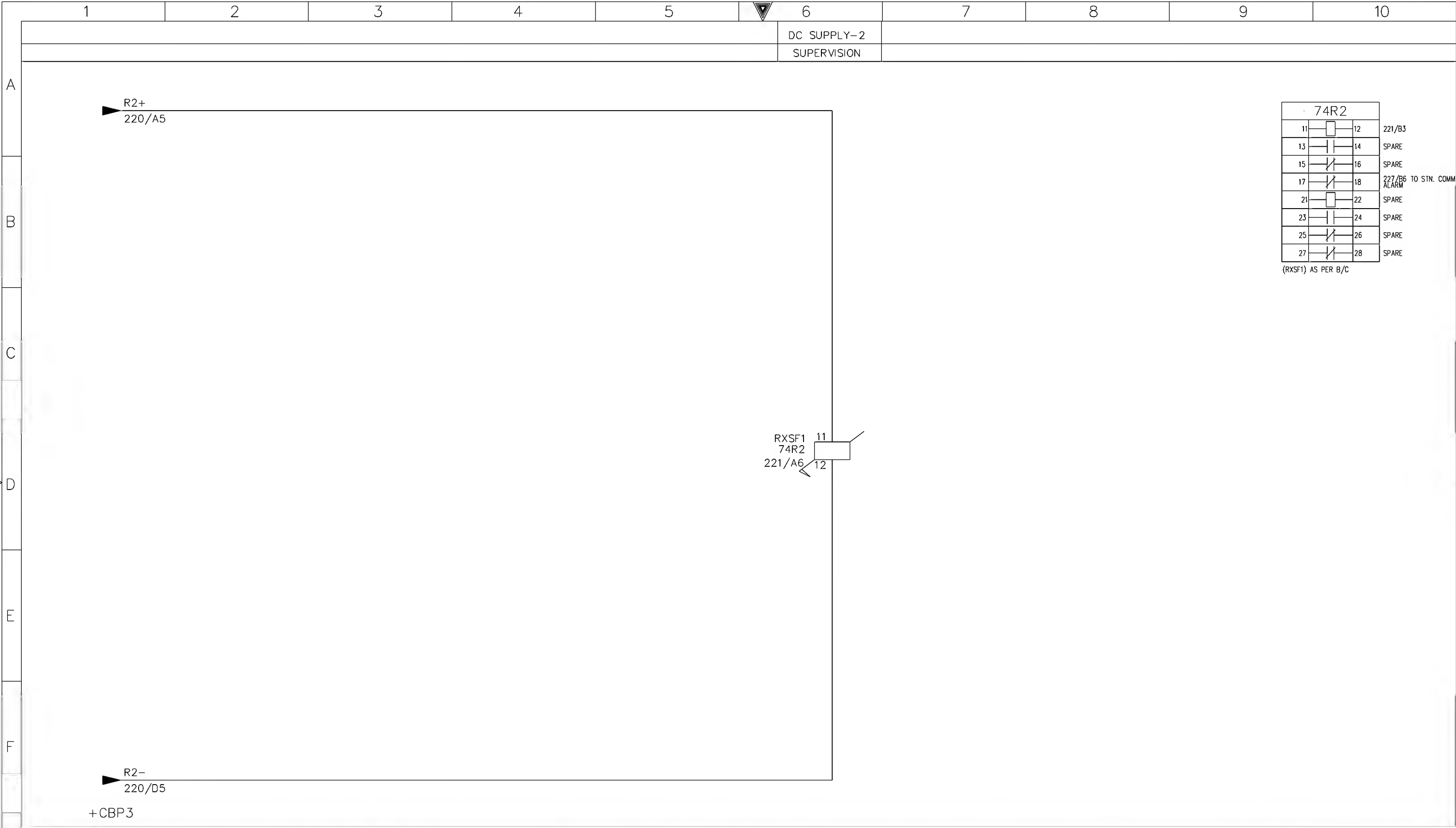
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		DC LOGIC CIRCUIT-GP1 PROTECTION		<div>الشركة الوطنية لنقل الكهرباء</div> <div>National Grid sa</div>		<div>INDEX</div> <div>P</div>		<div>PLANT NO.</div> <div>C421</div>		<div>DRAWING NUMBER</div> <div>CD-322956</div>		<div>SHEET NO.</div> <div>SHTCONT.</div> <div>218219</div>		<div>REV. NO.</div> <div>01</div>	
							13.8kV CAPACITOR BANK-3 PROT. PANEL													
G	01	14 08	FACTORY AS BUILT			DRAWN BY RIZ CHECKED BY KVR		S/S 8709-132/13.8KV IN AL-KHARJ CITY												
	00	13 04	FOR APPROVAL			DATE STARTED 24.01.2013 DATE COMPLETED _____		RIYADH SAUDI ARABIA												
	REV. NO.	DATE	DESCRIPTION			OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC														



G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		DC LOGIC CIRCUITS-GP2 PROTECTION		<div>الشركة الوطنية لنقل الكهرباء</div> <div> نقل الكهرباء National Grid sa</div>										
					DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>		13.8kV CAPACITOR BANK-3 PROT. PANEL		INDEX		PLANT NO.		DRAWING NUMBER		SHEET NO.		REV. NO.		
	01		14 08		FACTORY AS BUILT										SHT		CONT.		
	00		13 04		FOR APPROVAL		DATE STARTED <u>24.01.2013</u> DATE COMPLETED _____		S/S 8709-132/13.8KV IN AL-KHARJ CITY										
REV. NO.		DATE		DESCRIPTION		OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA		P		C421		CD-322956		219/220		01	



AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		DC LOGIC CIRCUITS-GP2 PROTECTION		<div>نقل الكهرباء</div> <div>الشركة الوطنية لنقل الكهرباء</div> <div>National Grid sa</div>					
DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>			DATE STARTED <u>24.01.2013</u> DATE COMPLETED _____		13.8kV CAPACITOR BANK-3 PROT. PANEL									
S/S 8709-132/13.8KV IN AL-KHARJ CITY			Riyadh		SAUDI ARABIA		S/S 8709-132/13.8KV IN AL-KHARJ CITY			INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.				
P C421			CD-322956		220/221		01			NG/D2-D (2012/01)				
DMS			VECTOR		NGD200									



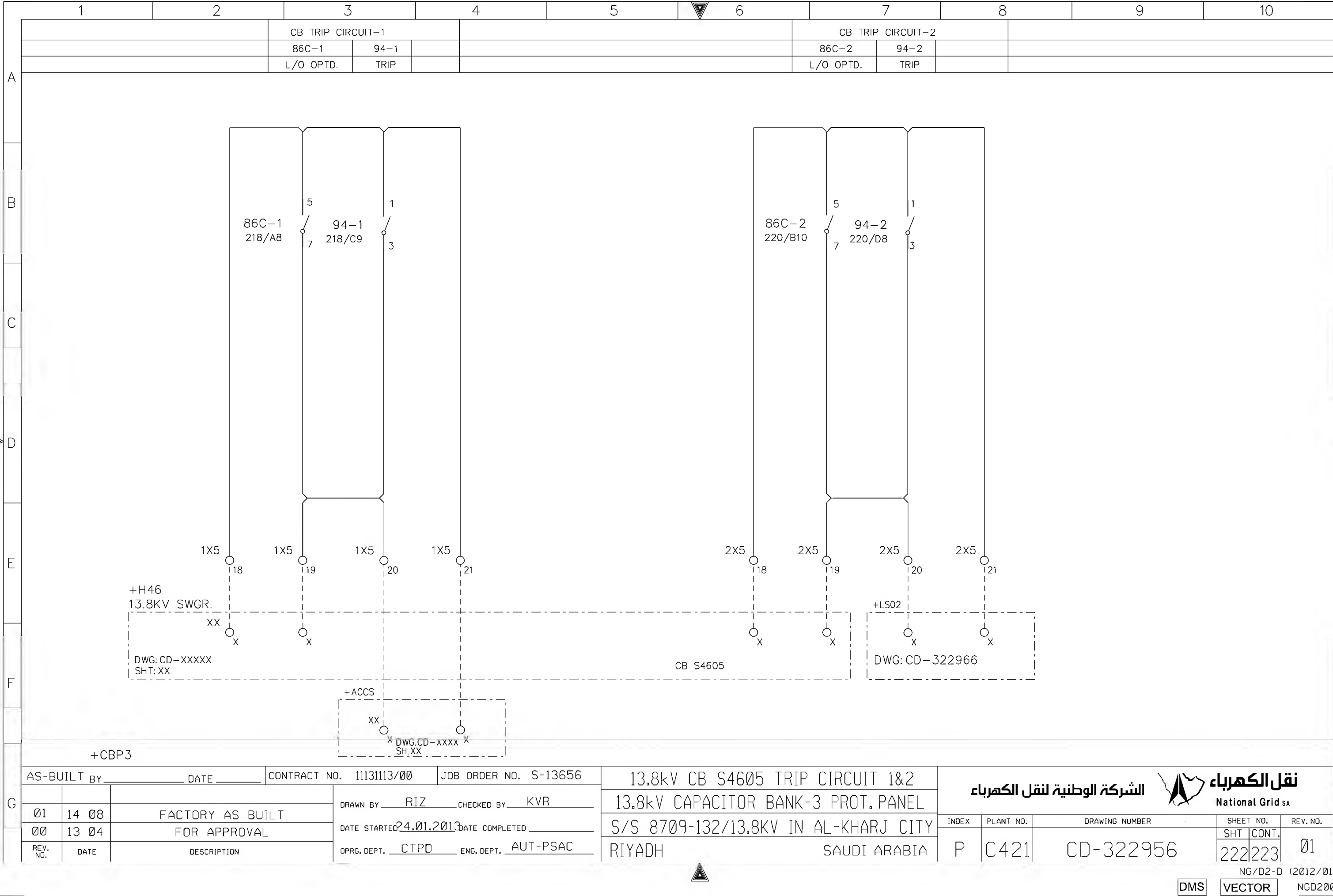
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13	<div></div>	14	SPARE
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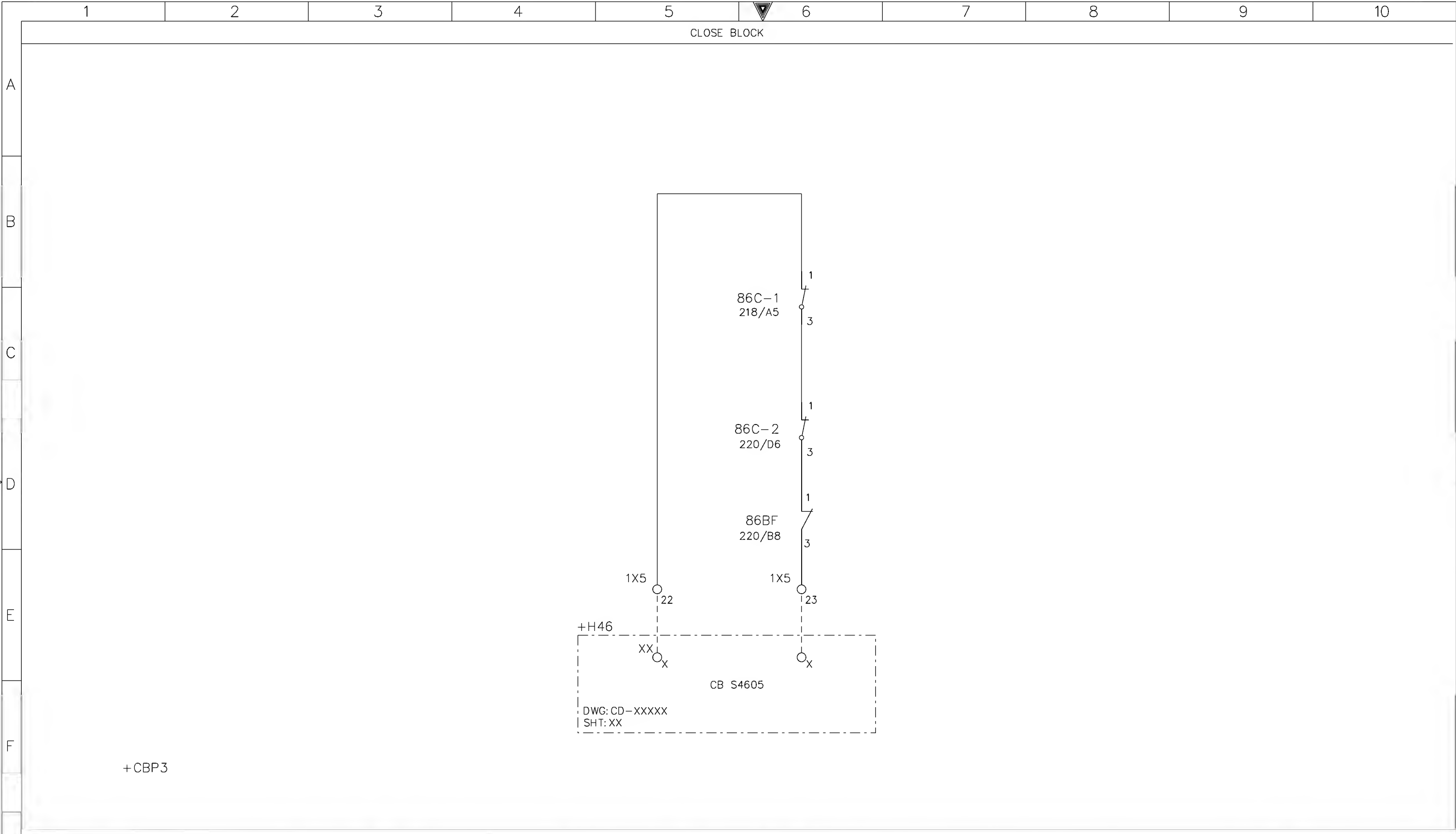
(RXSF1) AS PER B/C

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656
01	14 08	FACTORY AS BUILT FOR APPROVAL	DRAWN BY RIZ CHECKED BY KVR	
00	13 04		DATE STARTED 24.01.2013 DATE COMPLETED _____	
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC	

DC LOGIC CIRCUITS-GP2 PROTECTION	
13.8kV CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء		نقل الكهرباء National Grid sa		
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C421	CD-322956	SHT 221 CONT. 222	01



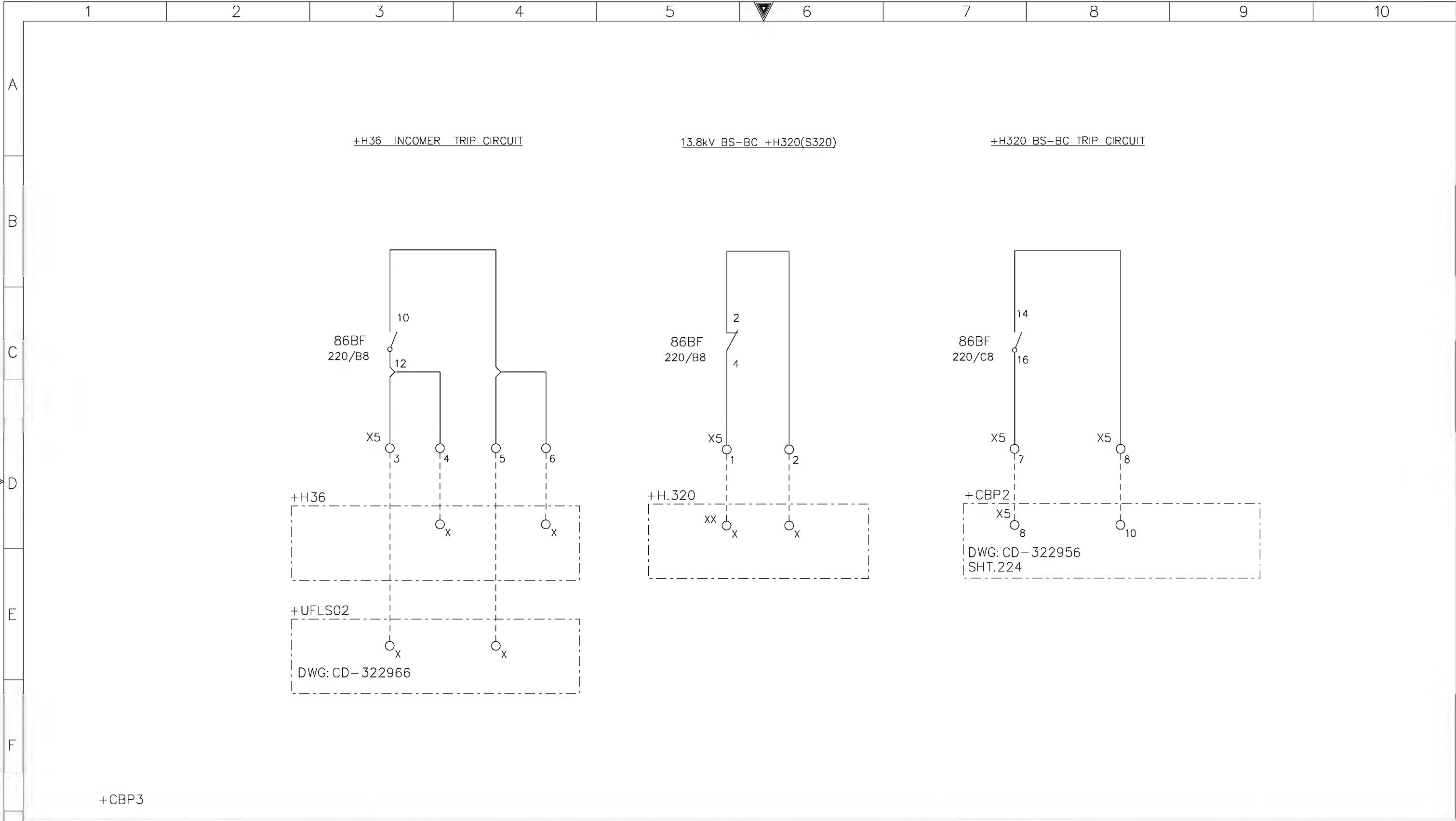


AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

01	14 08	FACTORY AS BUILT	DRAWN BY RIZ	CHECKED BY KVR
00	13 04	FOR APPROVAL	DATE STARTED 24.01.2013	DATE COMPLETED
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC

13.8kV CB S4605 CLOSE BLOCK CIRCUIT
13.8kV CAPACITOR BANK-3 PROT.PANEL
S/S 8709-132/13.8KV IN AL-KHARJ CITY
RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء		نقل الكهرباء		National Grid sa			
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.			
P	C421	CD-322956		SHT	CONT.		
				223	224		
				REV. NO.			
				01			



AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

01

14 08

FACTORY AS BUILT

00

13 04

FOR APPROVAL

REV. NO.

DATE

DESCRIPTION

DRAWN BY RIZ

CHECKED BY KVR

DATE STARTED 24.01.2013

DATE COMPLETED _____

OPRG. DEPT. CTPD

ENG. DEPT. AUT-PSAC


13.8kV CB BLOCK CIRCUITS

13.8kV CAPACITOR BANK-3 PROT.PANEL

S/S 8709-132/13.8KV IN AL-KHARJ CITY

RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

نقل الكهرباء

National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

P

C421

CD-322956

224

227

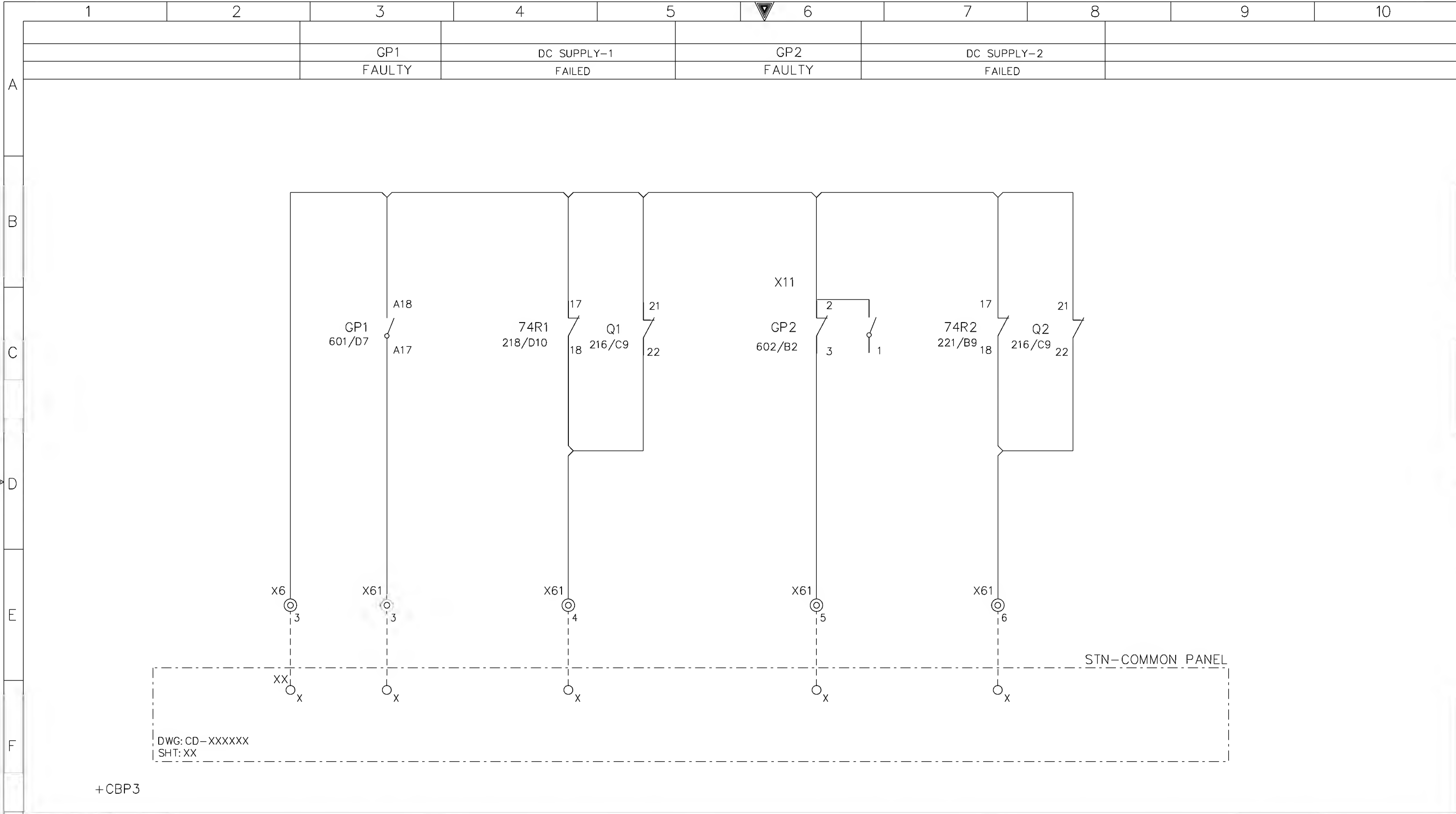
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NG/D2-D (2012/01)

DMS

VECTOR

NGD200



AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		STATION COMMON ALARM CIRCUITS		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>	
			DRAWN BY RIZ		CHECKED BY KVR		13.8kV CAPACITOR BANK-3 PROT. PANEL			
01 14 08			DATE STARTED 24.01.2013		DATE COMPLETED		S/S 8709-132/13.8KV IN AL-KHARJ CITY			
00 13 04			FOR APPROVAL				RIYADH SAUDI ARABIA		INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.	
REV. NO. DATE DESCRIPTION			OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		P C421 CD-322956		SHT CONT. 01	
									NG/D2-D (2012/01)	
									DMS VECTOR NGD200	

	1	2	3	4	5	6	7	8	9	10
A	CAP. BANK PROT.N. TRIP									
		GP1	GP2	BF	BF					
		PROTN.	PROTN.	STG-1	STG-2					
		OPTD.	OPTD.	OPTD.	OPTD.					
B										
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AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

01

14 08

FACTORY AS BUILT

00

13 04

FOR APPROVAL

REV. NO.

DATE

DESCRIPTION

DRAWN BY RIZ

CHECKED BY KVR

DATE STARTED 24.01.2013

DATE COMPLETED _____

OPRG. DEPT. CTPD

ENG. DEPT. AUT-PSAC

SPARE CONTACTS

13.8kV CAPACITOR BANK-3 PROT. PANEL

S/S 8709-132/13.8KV IN AL-KHARJ CITY

RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

نقل الكهرباء

National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

P

C421

CD-322956

231

245

01

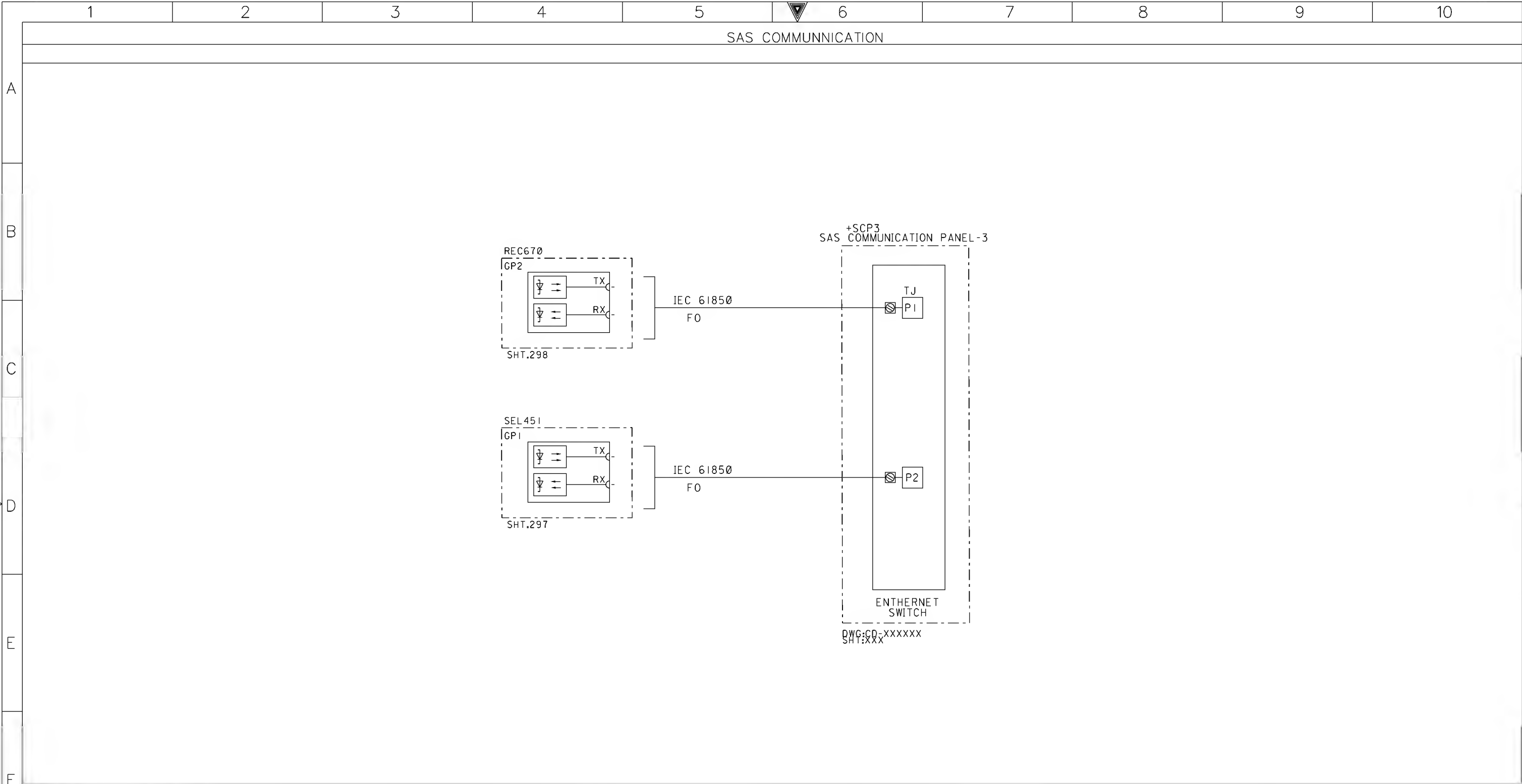
DMS

VECTOR

NG/D2-D (2012/01)

NGD200


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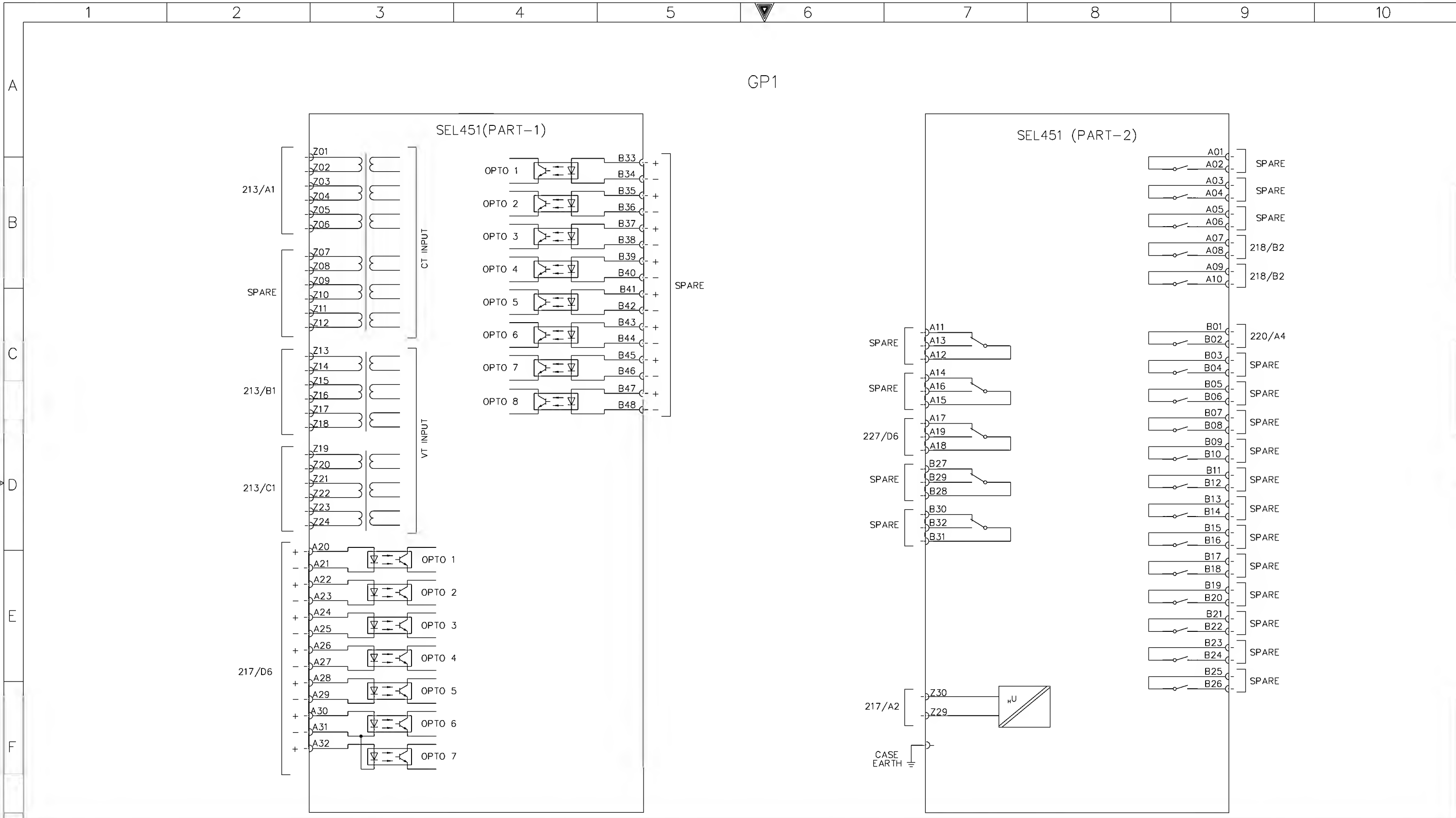


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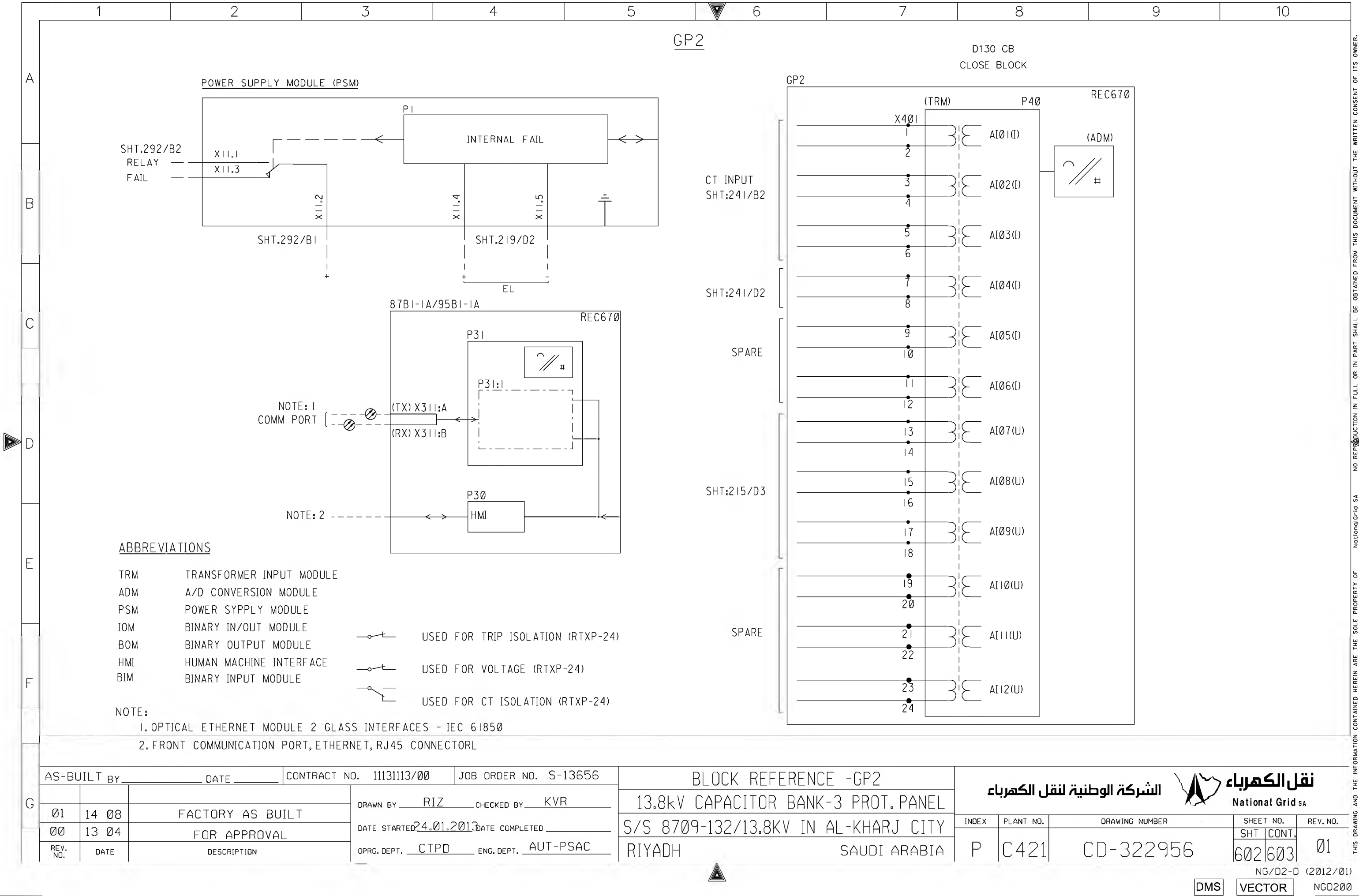
AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656	
01	14 08	FACTORY AS BUILT		DRAWN BY RIZ CHECKED BY KVR	
00	13 04	FOR APPROVAL		DATE STARTED 24.01.2013 DATE COMPLETED _____	
REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC	

SAS COMMUNICATION	
13.8kV CAPACITOR BANK-3 PROT. PANEL	
S/S 8709-132/13.8KV IN AL-KHARJ CITY	
RIYADH SAUDI ARABIA	

الشركة الوطنية لنقل الكهرباء				نقل الكهرباء	
				National Grid SA	
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.	
P	C421	CD-322956	REV. NO.		
			SHT	CONT.	
			245	601	01



AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		BLOCK REFERENCE-GP1		الشركة الوطنية لنقل الكهرباء National Grid sa									
			DRAWN BY RIZ		CHECKED BY KVR		13.8kV CAPACITOR BANK-3 PROT. PANEL											
01 14 08			FACTORY AS BUILT		DATE STARTED 24.01.2013		DATE COMPLETED _____		S/S 8709-132/13.8KV IN AL-KHARJ CITY									
00 13 04			FOR APPROVAL		OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA									
REV. NO.			DATE		DESCRIPTION				INDEX		PLANT NO.		DRAWING NUMBER		SHEET NO.		REV. NO.	
									P		C421		CD-322956		SHT		CONT.	
															601		602	
																	01	
																	NG/D2-D (2012/01)	
																	DMS	
																	VECTOR	
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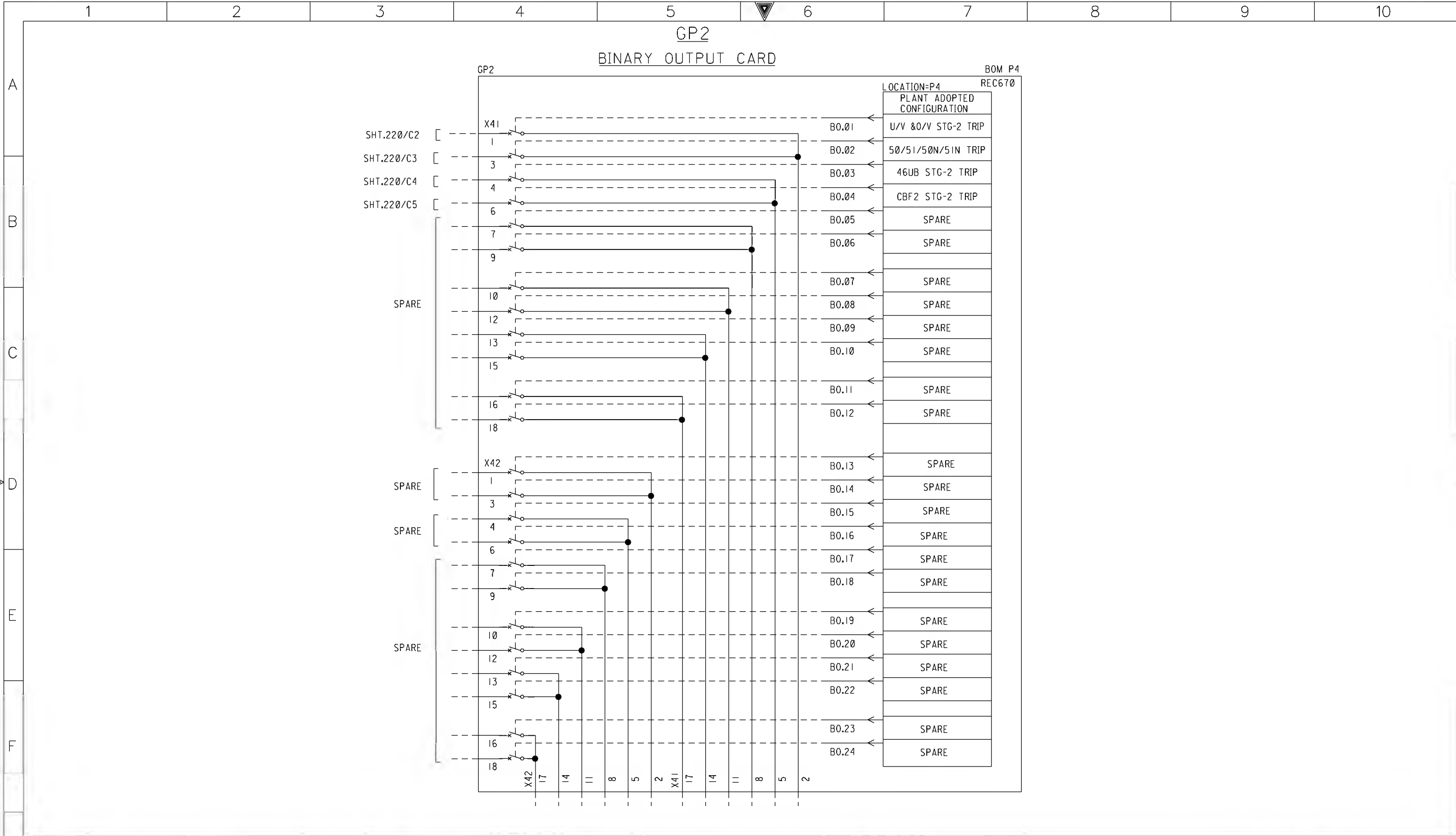
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AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

BLOCK REFERENCE -GP2

13.8kV CAPACITOR BANK-3 PROT. PANEL

S/S 8709-132/13.8KV IN AL-KHARJ CITY

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SAUDI ARABIA

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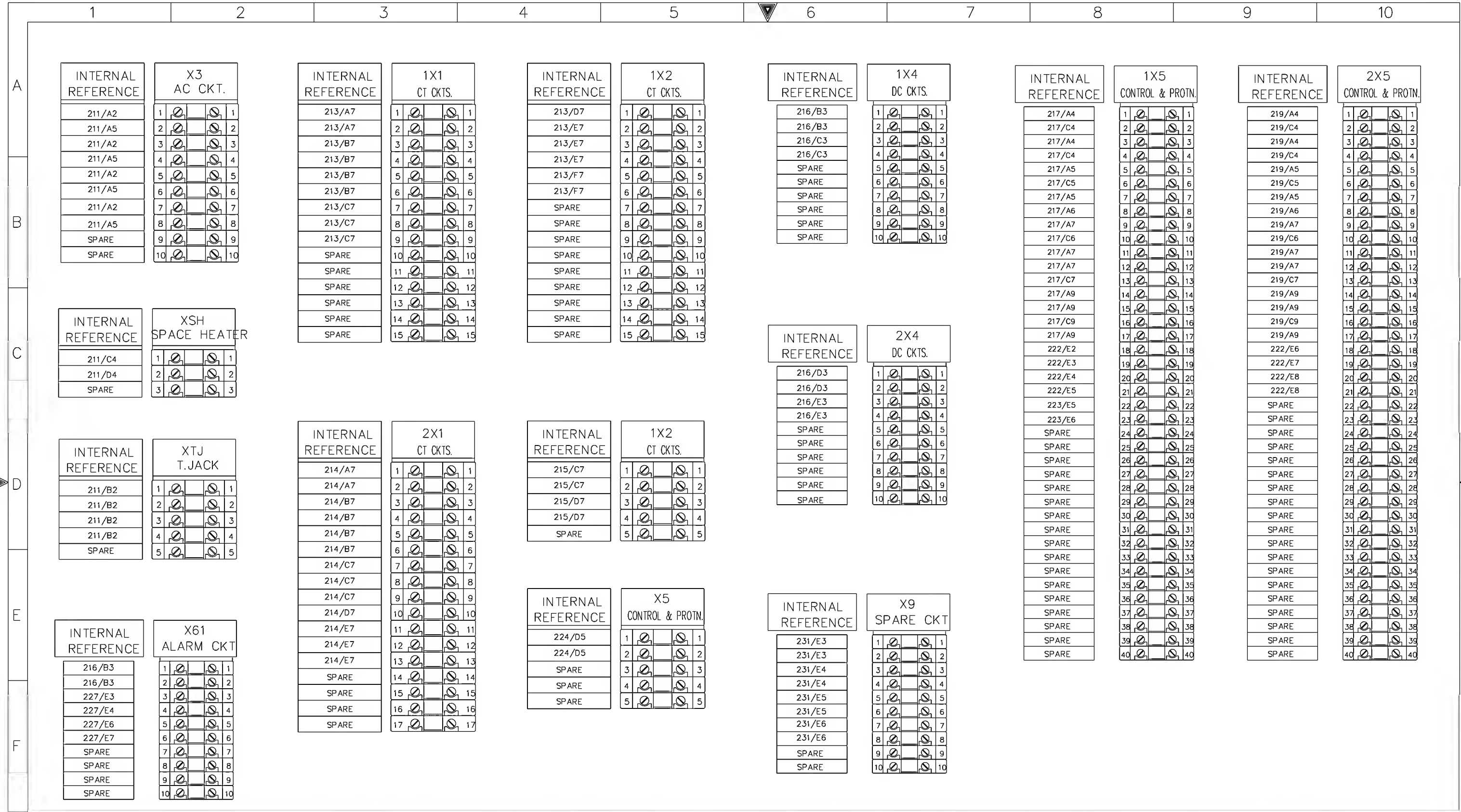
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NG/D2-D (2012/01)

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AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		TERMINAL BLOCK ALLOCATION		13.8kV CAPACITOR BANK-3 PROT. PANEL		الشركة الوطنية لنقل الكهرباء National Grid sa	
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